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ABSTRACT

The report serves as a systematic collection, analysis, and synthesis of research data, empirical evidence, program information, and various resource materials in the fields of recreation/therapeutic recreation and physical education/adapted physical education for disabled individuals. The report consists of over 20 state of the art reports, each of which includes the state of the art (including review of available literature), summaries of priority needs in research and demonstration and personnel preparation, and media needs (in some cases). Among the areas covered are physical education and recreation for blind, multiply handicapped, mentally retarded (mild to severe), epileptic, diabetic, and deaf mentally retarded individuals; the integration of handicapped individuals into regular recreation and physical education programs; effects of physical activity on asthmatic children; community recreation for handicapped persons; creative arts for handicapped persons; status of research on play apparatus for handicapped children; and diagnostic-prescriptive teaching/programming. Also presented are summaries of related projects funded by the Bureau of Education for the Handicapped and State Departments of Education and related conferences and projects sponsored by other groups. (Author)

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PHYSICAL EDUCATION AND RECREATION FOR IMPAIRED, DISABLED AND HANDICAPPED INDIVIDUALS... PAST, PRESENT, AND FUTURE

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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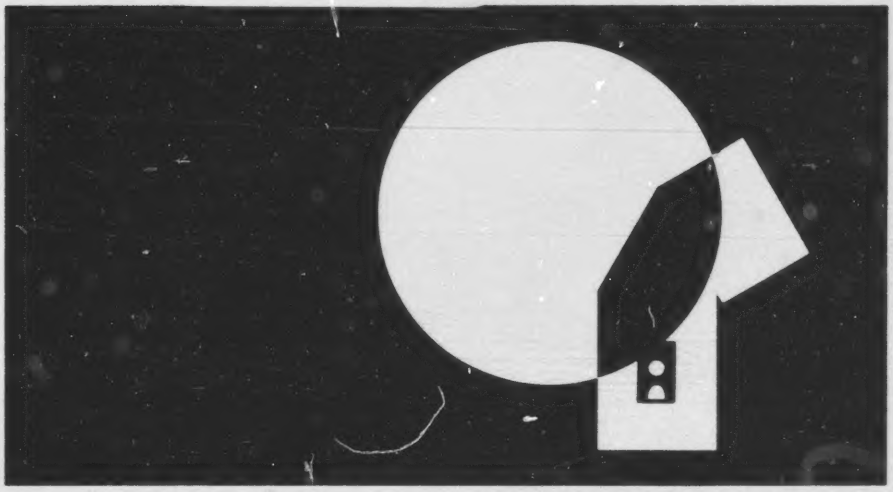

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Many different people have contributed a great deal of their time, talents, and efforts to guarantee that specific activities in the Information and Research Utilization Center in Physical Education and Recreation for the Handicapped (IRUC) were successful. Because of the vastness of IRUC activities, extensive coverage all over the country and involvement of so many different people, it is literally impossible to name all who have participated in, contributed to, and been a part of the IRUC family.

Willingness of individuals from many different disciplines representing a variety of specializations to share expertise gained through many years of experience has been characteristic of the physical education and recreation involvement for impaired, disabled, and handicapped persons. Such unselfish dedication continues to be a major reason for the great amount of progress that has been stimulated through this movement in a relatively short time. This same type of dedication, devotion, and commitment will lead to solutions of many problems and issues identified in the following sections of this report. No more fitting example of teamwork and cooperation can be exemplified than efforts of many different people who contributed to this state of the art report. Special thanks and appreciation are extended to each of the individuals who developed specific sections of this report. Names of these talented individuals are included with titles of their papers in the Table of Contents and at the beginning of their respective papers.

Additional thanks and appreciation are extended to every individual who has been a part of the IRUC staff since its inception. Each in his/her own way contributed directly and indirectly to the process by which state of the art information was collected, reviewed, and analyzed. Those who have served IRUC so well include: Eleanor Sanderson and Viki Annand, Materials Assistants; Paul Harrington, Roger Pearson, Karen Littman, Dana Moore, and Linda Fender, student interns; Mary Dyer, Claudian Burton, Terry Ames, Cheryl Kozak, Mary Jane Freeman, Claudia McQueeney, and Cindy Born, full and part-time support staff; Lowell Klappholz and Howard Sorrell who assisted with special projects and activities.

Special mention, highest gratitude, and greatest praise must be reserved for the two individuals to whom the bulk of the responsibility for developing this state of the art report fell:

> Dolores M. Geddes, Research and Program Associate, did much of the analyzing and synthesizing of all areas and sections in the report, wrote a number of the state of the art statements, and did much of the work relative to priority statements.
>
> Wanda L. Burnette, Administrative/Program Coordinator, coordinated production and processing of the report.

Words cannot adequately express what each of these individuals has given through IRUC to helping many impaired, disabled, and handicapped individuals live happier and more satisfying lives through active participation in physical and recreational activities. To each, a sincere and heartfelt thanks alot for jobs extremely well and expertly done.

Julian U. Stein
Director

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PREFACE

WHAT IS IRUC?

The Information and Research Utilization Center in Physical Education and Recreation for the Handicapped (IRUC) has been supported by the Division of Innovation and Development (formerly Research), Bureau of Education for the Handicapped, U. S. Office of Education, Department of Health, Education, and Welfare as a demonstration project (OEG-0-72-5454) between June 30, 1972, and June 29, 1975. Purposes of IRUC have been to:

- Collect, categorize, describe, interpret, and disseminate information and materials about various aspects of adapted physical education and therapeutic recreation programs including information about materials, methods, activities, ongoing programs, promising practices, and demonstration efforts.

- Serve as a research utilization center for adapted physical education and therapeutic recreation programs with particular emphasis on putting theoretical, basic, experimental, and applied research findings into practical operation including consideration given to collecting, evaluating, interpreting, and disseminating research information and findings, and in categorizing studies for use by all publics served by the Center.

More specifically, by the end of the third year IRUC was to accomplish the following objectives:

- Obtain a clearer understanding of the state of the art in physical education, recreation, and related areas for persons with various handicapping conditions through systematic collection of research data, empirical evidence, and program materials and information.

- Provide practitioners with functional information about diverse data systems.

- Assist the Bureau of Education for the Handicapped in establishing research needs and priorities.

Implementation of these goals and objectives has been designed to provide:

- Basis for a dissemination/distribution referral system that (1) supplements and/or complements existing collection/retrieval/dissemination centers/systems/networks in special education, physical education, recreation, and related areas, and (2) promotes greater use of all such

- systems, materials centers, and information resources by personnel interested and involved in adapted physical education, therapeutic recreation, special education and related areas.*

- Data for state of the art statements to show (1) what has been and/or is going on in physical education, recreation and related areas, and (2) types of research, demonstration, training, and service projects and activities that are needed and should receive priority attention. In addition to identifying and analyzing completed and ongoing research projects and activities, information about ongoing programs, resource people, empirical evidence, and observational reports have provided more comprehensive view of what is going on in these areas* and what are priority needs of personnel in the field.

- Basis for IRUC distributing materials and information to resource groups at national, regional, and state levels throughout the United States.

- Ways to refer individuals who contact IRUC for assistance to appropriate national, regional and/or state groups that have been sent materials and information appropriate for each request.

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*Information included in IRUC Final Report, Part II, Summary of State Surveys (to identify resource programs and personnel concerned with physical education and/or recreation or related areas for impaired, disabled, and handicapped persons). Contact IRUC, AAHPER, 1201 16th Street, N.W., Washington, D. C. 20036, for further information.

INTRODUCTION

THE STATE OF THE ART

A major purpose of the Information and Research Utilization Center in Physical Education and Recreation for the Handicapped (IRUC) has been to obtain a clearer understanding and more definitive assessment of the state of the art in physical education/adapted physical education, recreation/therapeutic recreation, and related areas for impaired, disabled and handicapped persons. This has been accomplished through systematic collection, analysis, and synthesis of research data, empirical evidence, program information, and various resource materials. These data have been presented so that personnel at the Bureau of Education for the Handicapped (BEH) and from other involved groups can establish with more percision definitive research and demonstration, training, and service needs and priorities for future activities and funding. Preliminary information, statements, and summaries have been included in IRUC Quarterly Reports since late in the first year of the project. Current trends and analyses have been included at least once per year in IRUC Quarterly Reports, published in the regular column "IRUC: What's Going On?" in the Journal of Physical Education and Recreation, and presented in sessions at national, regional, state, and local meetings, conferences, and conventions. This formal and extensive state of the art report represents the culminating activity for IRUC in this process.

Input, consultation, guidance, and assistance have been obtain from many different individuals with special expertise in specific areas. A great deal of review, analysis, and synthesis have been done by members of the IRUC staff. In general, this state of the art report is organized as follows:

- Comprehensive reviews of research, empirical evidence, and related inquiry are presented on specific aspects of physical education/adapted physical education, recreation/therapeutic recreation, and related areas involving impaired, disabled, and handicapped persons.
- Summaries of priority needs in research and demonstration and personnel preparation follow each comprehensive review and presents the state of the art for this area. Where appropriate, priorities in media services with other program implications are included. Priorities are listed as high, mid, or low in accordance with the IRUC objective to provide such direction to personnel at BEH.
- Additional sections provide information and materials about (1) related projects funded by BEH and state departments of education, and (2) related conferences and projects sponsored by other groups and organizations.

No attempt has been made to include in this report state of the art analysis which can be found in reports and materials from other projects and are available from other sources.

Other Projects

In addition to information about several of these analyses in sections of this report mentioned above, representative of other projects and sources from which analyses can be obtained are:

Physical Education for the Handicapped: Implications from Research. Gene Asprey, Director of Big Ten Body of Knowledge Symposium, Department of Physical Education, University of Iowa, Iowa City 52240

Project AQUATICS. Grace D. Reynolds, Project Director, c/o YMCA of Southwest Washington, 766 15th Avenue, Longview, Washington 98632

Avocational Counseling. Robert P. Overs, Project Director, c/o Curative Workshop of Milwaukee, 10437 W. Watertown Plant Road, Milwaukee, Wisconsin 53246

Leisure Time Activity for the Handicapped. Peter J. Verhoven, Project Director, c/o National Recreation and Park Association, 1601 North Kent Street, Arlington, Virginia 22202

Activity Analysis. Doris Berryman, Professor, Therapeutic Recreation Research, New York University, New York 10003

Psychomotor and Perceptual-Motor Function of Young Handicapped Children. George E. Uhlig, Project Director, c/o Vasquez Associates, 1744 North Farwell Avenue, Milwaukee, Wisconsin 53202

Deaf-Blind Institute on Recreation and Leisure for Deaf Blind. John Nesbitt, Project Director, Department of Recreation, University of Iowa, Iowa City 52240

Project ACTIVE. Thomas M. Vodola, Project Director, c/o Township of Ocean School District, Dow Avenue, Oakhurst, New Jersey 07755

Therapeutic Recreation in Community Colleges. Jerry Kelley, Project Director, c/o Office of Recreation and Park Resources, University of Illinois, Champaign, Illinois 61820

Head Start Information Project. David L. Braddock, Project Director, c/o Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091

Conferences on Preparation of Personnel to Serve the Handicapped; Early Childhood Education for the Handicapped; Career Education for the Handicapped; and Education of the Severely Handicapped. Arleen S. Barron, Director of Projects, c/o Educational Testing Service, Princeton, New Jersey 08540

Other Sources

Over the past ten years numerous formal and informal publications have presented results of various surveys conducted to obtain information and input from persons in the field about their problems, concerns, needs, issues, and priorities. Several of these summaries with national implications have been summarized and distributed for use in program development, research studies, demonstration projects, and related activities. Among the reported surveys are:

- *Survey on Problems, Needs, and Special Activities in Physical Education and Recreation for the Handicapped* conducted by AAHPER Unit on Programs for the Handicapped in 1968-69.

- *Physical Education and Recreation for Handicapped Children: A Study Conference on Research and Demonstration Needs* conducted by AAHPER and National Recreation and Park Association (NRPA) in 1969.

- *A Bibliography of Surveys in Physical Education and Recreation Programs for Impaired, Disabled, and Handicapped Persons* developed and distributed by IRUC. Available through ERIC Document Reproduction Service, P. O. Box 190, Arlington, Virginia 22210, Document Number ED 092 577.

The follow areas are included in this state of the art report:

Professional Preparation

Handicapping Conditions and Activities

Integrating Persons With Handicapping Conditions Into Regular Physical Education and Recreation Programs

Research Information on Perceptual-Motor/Psychomotor Function for Children and Youth With Learning Disabilities

Physical Education, Recreation, and Psychomotor Function of Mildly and Moderately Mentally Retarded Persons

Physical Education, Recreation and Related Areas for Severely and Profoundly Mentally Retarded Individuals

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An Overview of the Status of Camping for the Handicapped in the United States: Report of the Committee on Camping for the Handicapped, National Therapeutic Recreation Society

IRUC Final Report, Part II, Summary of State Surveys (to identify resource programs and personnel concerned with physical education and/or recreation or related areas for impaired, disabled, and handicapped persons) includes sections on

- The IRUC system with Listing of National Resource Contacts, and
- State Survey Summaries with separate listings by states of programs and resource personnel.

High Priorities

Careful review and critical analyses of these detailed state of the art statements and the identified priorities reveal several trends and consistent threads. Even though many of the specifically discussed problems and needs can and should be investigated through individual research, demonstration, training, and/or service studies, projects, and activities, several coordinated and consolidated projects are necessary and should be given serious consideration and high priority. These major projects should address themselves to basic causative factors, not simply deal with specific symptoms as in so many individual studies and projects. These projects must be of sufficient duration and supported at levels necessary to accomplish purposes for which each is designed; planned and systematic dissemination of results must be a part of the total process.

Individual Profile Approach

> Identify personal characteristics, traits, and qualities that make it more/less likely that certain individuals will succeed/fail in specific programs/activities, in certain settings/environments, or through given methods/approaches/techniques.

Virtually all approaches--research, programmatic, assessment, and evaluation attempt to generalize findings and apply information to given populations, specific handicapping conditions, certain age groups, sex of participants, and to activities and methods themselves. Other approaches emphasize application in terms of developmental or functional levels of individual participants to determine appropriate and inappropriate activities and methods. These approaches are based on principles and techniques that have been effective and successful in the physical sciences. Because of the nature of the physical sciences and ways they differ from the behavioral sciences--the major variables are people--new and different techniques must be explored and introduced into the behavioral sciences. This is a necessity if programs and methods are to be individualized according to specific needs and unique characteristics of each participant. This can be studied through movement, physical education, motor, perceptual-motor/psychomotor, sports, and recreational activities as follows--

- Have individuals participate in activities in which specific techniques, methods, and approaches are used. Include sufficient numbers of subjects in different groups to investigate all variables for which data are sought--i.e., specific handicapping conditions, age groups, sex of participants, activities, methods, program settings, therapeutic and learning modalities, combinations of factors.

- Use definitive criteria to determine success or failure of each participant in terms of variables for which data are sought. Base success or failure on comparisons to norms, criterion referenced approaches, objective data, subjective observations, or combinations of these and other appropriate assessment devices.

- Obtain detailed information about a variety of physical, mental, social, emotional, and related characteristics of each participant.

- Compare profiles of individuals successful and unsuccessful in activities in which specific techniques, methods, and approaches have been used in terms of physical, mental, personality, social, emotional, and related characteristics.

- Reverse the process the next year and assign or guide individuals into activities in which specific techniques, methods, and approaches are used according to physical, mental, personality, social, emotional, and related characteristics most likely to result in success and unlikely to create unsuccessful experiences.

- Continue to refine the process so that greater accuracy, validity, and reliability can be expected in predicting how certain programs, activities, and approaches are appropriate and/or inappropriate for given individuals.

Although this process has been described in terms of study through movement, physical education, motor, perceptual-motor/psychomotor, sports, and recreational activities, it's applicable to virtually any area of human behavior. For example, other applications of the process in this specific area of concern include --

- Determine personal characteristics and traits that indicate when an individual is ready to learn certain physical/motor skills most expeditiously.

- Identify personal characteristics and professional competencies of teachers/leaders who function more/less effectively with specific groups/individuals, under given conditions, in new organizational/administrative structures, at different levels, and in specific program environments/situations.

- Match personality characteristics and traits of administrators and other staff with those of students and other program participants in terms of organizational and administrative patterns, relative amounts of program structure, and degree of democratic/authoritarian function.

- Review programs, activities, and efforts that focus on differences among individuals with various handicapping conditions and nonhandicapped populations to determine efficacy of human similarities becoming bases for programs, activities, efforts, and services.

- Determine why certain individuals select specific specializations-- i.e., therapeutic recreation, adapted physical education, athletic training, special education, mildly mentally retarded, severely and profoundly mentally retarded, visible conditions, invisible conditions, community based programs, schools, colleges/universities, research.

Differential Staffing

> Develop truly differential staffing patterns in projects/programs so that leader/teacher -- participant/student ratios are reduced through judicious use of paraprofessional personnel supervised by well-qualified, trained, and experienced personnel.

Public school and community recreation programs are increasingly becoming responsible for larger numbers of severely and profoundly mentally retarded and multiple involved impaired, disabled, and handicapped persons. Zero-reject legislation and litigation mandating education, treatment, and community services for all, means that more individualized attention, larger staffs and smaller participant-leader ratios are necessities. However, economic conditions, conservative attitudes of people in every community, failing bond referendums, and a growing backlash against excessive spending for special education and related services indicate that unlimited resources are not available. Balance between realistic expectations of communities and appropriate and adequate services for special populations must be attained by introducing new and nontraditional procedures. Differential staffing is one way in which more efficient and effective use of existing resources can be accomplished. In this process --

- Develop a staffing pattern that includes an experienced and qualified master teacher as captain of the team, appropriate support and resource specialists, some teachers/leaders, and large numbers of specially and specifically trained paraprofessional personnel. Support and resource specialists could include diagnostic, clinical, remedial, resource room, itinerant and/or team teachers, consultants, developers of instructional materials and prescriptions for effective teaching and occupational, physical, corrective, dance, art, music and activity therapists and therapeutic recreation specialists as needed.

- Recognize that these master teachers should be on salary scales or schedules commensurate with or even higher than those of administrators. This part of the process recognizes talents and competencies of master teachers and helps break the Peter Principle where for financial reasons outstanding teachers become poor administrators.

- Encourage education associations and teacher unions to support this approach. At the present time many of these groups are diametrically opposed to any recommendation designed to increase the number of paraprofessional personnel and possibly reduce the number of certified teachers. Differential staffing is not intended as a way for school systems to cut budgets but as a means for providing more effective and efficient educational services within the same basic fiscal structure.

- Apply differential staffing approaches in physical education/adapted physical education, recreation/therapeutic recreation, and related areas for impaired, disabled, and handicapped individuals. The existing voluntary registration program sponsored by the National Therapeutic Recreation Society (NTRS) provides an excellent base for a career ladder to be implemented as part of differential staffing patterns in regular and special recreation programs.

Differential staffing could serve as a stimulus to bring together personnel from various specializations and therapeutic modalities in more cooperative effort and action. A special part of such an endeavor could be to --

- Identify unique roles and contributions of various disciplines, specializations, activity modalities, and organizations in meeting needs of special populations as bases for promoting, developing, and maintaining greater cooperative relationships among groups intimately involved in serving persons with various handicapping conditions.

Results of this effort could lead to reduction in duplication of effort, activity, and resources. The concept of activity or adaptive therapy or unification of therapeutic modalities as proposed and partially implemented by the Veterans Administration could be reviewed and analyzed critically, objectively, and unemotionally through such a process.

Transfer versus Specificity in Learning

Address issue of transfer versus specificity in learning as applied to movement, motor development, physical fitness, perceptual-motor function, recreational skills, and related physical/personal characteristics, and as each relates and/or does/does not contribute to various psychomotor, cognitive, and affective functions.

Much research, many assessment/evaluation approaches and large amounts of curriculum and programmatic materials are based on the premise that transfer occurs. Through transfer knowledge, skills, and competencies gained in one situation are felt to be automatically available for use in other situations and circumstances no matter how different or unrelated. Results of experimental studies, empirical evidence, and practical experience suggest that transfer does not occur to the degree purported or hoped. For example--

- Correlations and other statistical relationships between so-called gross and fine motor tasks and activities have consistently been small and low.

- Relationships among various fine motor tasks and acts have resulted in *lower* correlations and statistical relationships than between gross and fine motor acts.

- Relationships among various gross motor activities, acts, and tasks, while somewhat higher than relationships between gross and fine motor activities, have also been relatively small and low.

- Recent investigations have shown perceptual-motor test items or tasks purported to measure the same characterization or traits did not load on the same factor in an extensive factor analytic study.

- Basic components and characteristics of physical fitness such as muscular strength and endurance have been shown to be rather specific in terms of range and angle of motion through which they are developed.

- Reports and studies indicate that apparent relationships between components such as visual perception and perceptual-motor function have resulted because many visual perception test items require perceptual-motor functions.

- Results from other studies, research projects, empirical reports, observations, and subjective statements reenforce the point that is consistent through each of the above--*learning, whether motor/physical or cognitive/mental, appears to be specific with transfer occuring only under specific conditions and circumstances.*

Despite this evidence, coordinated study and extensive dissemination of results are still major priorities today. These are not only needs in physical education/adapted physical education, recreation/therapeutic recreation, and related areas dealing with impaired, disabled, and handicapped persons, but in special education and all of education as well. Representative of specific questions and problems to which coordinated research and study are needed relative to the basic question of transfer versus specificity of learning include--

- Distinguish between transfer and application or utilization of general and specific skills, competencies, movements, patterns, knowledges, attitudes, and understanding.

- Determine which psychomotor, affective, and cognitive attributes transfer/do not transfer and under what conditions transfer is most likely to occur/not occur.

- Ascertain whether certain personal characteristics and traits of (1) learners/participants, (2) teachers/leaders are more/less likely to be associated with transfer.

- Determine whether transfer is more/less likely to occur in certain activities, skills, movements, patterns, and tasks.

- Ascertain whether transfer is more/less likely to occur in individuals with certain types, degrees, severities of handicapping conditions who are in regular/special programs.

- Determine methods, approaches, and techniques that make it more/less likely that transfer will occur.

- Ascertain methods, approaches, and techniques that stimulate more/less application of utilization in certain activities, movements, skills, patterns, and tasks.

- Investigate positive/negative effects generalization of transfer has had (1) on results, interpretation, and application of research, (2) in use of evaluation/testing/assessment/diagnostic instruments, and (3) in application of curriculum and programmatic materials.

- Assess exact cause and effect reasons as to how and why programs and activities emphasizing motor development, movement, and physical activities have been successful with mentally retarded, learning disabled, emotionally disturbed, and other children with various handicapping conditions.

- Investigate differences/similarities between splinter skills and specificity of learning.

- Identify characteristics of children who need/do not need a variety of experiences in terms of number, type, kind, length, and frequency to master certain skills, concepts, knowledges, and competencies. Investigate ways in which more/fewer opportunities to apply specific skills, concepts, knowledges, and competencies affect ways in which individuals transfer, apply, and utilize each of these.

- Evaluate effects of such characteristics as success, satisfaction, confidence, self-image, pride, and fun have on transfer.

- Investigate consistencies/inconsistencies between behavioral/performance approaches and traditional testing procedures as further manifestations of the transfer versus specificity of learning question.

- Replicate previous studies to confirm/deny relationships among (1) gross and fine motor acts, (2) perceptual-motor and visual-motor tasks, (3) basic components of physical fitness, (4) sports and recreational skills, and between these traits and various cognitive and affective functions.

Major Problem Areas

Various issues and problems in physical education, recreation, and related areas for impaired, disabled, and handicapped individuals continue to be discussed, strategies planned, and action taken at national, state, and local levels. Additional information, research activities, demonstration projects, training projects, and service activities are needed to help with such problem areas as--

- *Activities, methods, approaches, and techniques to reach severely and profoundly mentally retarded persons, multiple involved individuals, and adults--especially geriatric cases with all types of handicapping conditions.* Additional input in terms of research, empirical evidence, and program information is needed to extend this growing body of knowledge.

- *Assistance for classroom teachers and leaders responsible for regular physical education and community recreation program as individuals with all degrees and types of handicapping conditions are integrated and mainstreamed through normalization approaches.* In addition to activities, methods, approaches, and techniques for implementation in regular programs, clarification of intent of legislation and litigation mandating *zero-reject* principles as they apply to physical education, recreation, and related areas are needed.

- *Determination of specific and specialized certification requirements for personnel involved in adapted physical education programs and recreational activities.* Special considerations include (1) delineation of competencies and/or course work for undergraduate physical education and recreation major students in the areas of adapted physical education, therapeutic recreation, and special education, (2) desirability, feasibility, and practicality of providing opportunities for undergraduate specialization in these areas, (3) delineation of competencies and/or course work in physical education and/or recreational area for special education personnel, and (4) delineation of roles, functions, competencies, and/or course work for paraprofessional personnel, aides, and other specialized personnel involved in adapted physical education, therapeutic recreation, and related programs.

- *Physical education personnel involved in programs and activities for special populations increasingly being supported by and housed in departments/divisions of special education at state and local levels.* As this trend increases, consideration and investigation are needed of (1) effects and impact upon all aspects of physical education programs and recreational activities for these groups, (2) ways in which these procedures affect attitudes, efforts, and involvement of physical education departments/divisions toward special populations, and (3) considerations as to what administrative structure can best serve interest and needs of those with handicapping conditions through physical education.

- *Influence and control of administrators in schools, recreation departments, residential facilities, and day care and activity centers over the quality and quantity of physical education and recreational opportunities provided persons with handicapping conditions.* Generally they have not attended workshops offered in these areas. Ways to take inservice activities directly to meetings of administrators need investigation and implementation. In addition, many recognize, understand, and appreciate needs of special populations but do not feel they have nor can afford all specialized resources they feel are required. These false ideas and attitudes must be reversed.

- *Ways to implement existing laws, regulations, and mandates as they apply directly and indirectly to persons with various handicapping conditions.* Many school children in special education programs are excused from physical education when state laws directly or indirectly mandate physical education for *every* child; many buildings and facilities being built with federal and/or state funds are not totally accessible despite laws that require such considerations. Ways of implementing existing laws in all areas, especially as related to physical education and recreation need to be attacked positively along with continued efforts for new legislation to promote needed programs and activities.

- *Reactions and responses of much of the lay public to persons with various handicapping conditions often appear emotional--apathy, indifference, ignoring, sympathy, overindulgence.* Research and experience indicate that involvement with people who are different provides bases for understanding, and therefore, continued emphasis is needed upon public informational programs and activities in every community. Accomplishments and achievements in physical activities, sports, and recreational pursuits need to be more fully explored as means of emphasizing abilities and communicating to the lay public about impaired, disabled, and handicapped persons.

- *Identification of an individual in each state to coordinate physical education and/or recreational activities for impaired, disabled, and handicapped persons.* Various successful approaches in meeting these needs are now in effect in several states. These different administrative and financial structures need review, evaluation, and application in other states according to their particular needs and specific situations. As persons from various organizations, agencies, and institutions become more involved and accept their responsibilities for providing opportunities for special populations in both regular/integrated and special/separated situations, the need for this type of coordination increases and becomes more crucial. Duplication of effort, and competition for the same participants, facilities, funds, and resources must be minimized and eliminated if possible. It is ironic that many of these presently competing groups identify the same basic problems and barriers to meeting their respective needs.

- *Assistance for professional and paraprofessional personnel involved in Early Childhood Education and Head Start Programs.* Individuals, groups, and special projects emphasized interest in and need for program materials and research activity regarding roles of movement, play, physical and recreation activities for these age groups. Legislation lowering ages for which public schools are responsible for children, laws mandating Head Start Programs to enroll a minimum of ten percent handicapped children, and priority emphasis of BEH for Early Childhood Education Programs for the handicapped reemphasize these needs.

Additional Problems and Priorities

Many of the problems, questions, concerns, and issues identified and discussed in specific sections of this state of the art report can be related to and/or applied to one or more of these three major projects. However, it should be noted that many of these specific problems, questions, concerns, and issues have continually surfaced during the last three years as IRUC staff and consultants reviewed, analyzed, and synthesized voluminous amounts of materials. Discussions with individuals and representatives of various organizations and agencies at conventions, conferences, workshops, and meetings, and input from people in a variety of program environments and situations have identified many of these same priorities. Within the context of the basic noncategorical approach to this section of the state of the art report the following needs are not related to or identified with any particular handicapping condition or program type. These needs statements are presented in terms of problems, questions, issues, and concerns for more effectively serving impaired, disabled, and handicapped persons in general and with implications for (1) research and demonstration, (2) personnel preparation, and (3) services in physical education/adapted physical education, recreation/therapeutic recreation, and related program areas for these groups.

Research and Demonstration

High Level

- Differentiate similarities/differences between motor learning and learning through motor activities.
- Assess relationships of motor/physical performance/processes to cognitive development, academic achievement, and social/emotional developments.
- Compare short and long range effects of early childhood programs that place emphasis upon early cognitive function, academic growth, and intellectual development with programs placing greater emphasis on learning and educational processes through play, exploration, discovery, and fun; assess effects in all domains--psychomotor, affective, and cognitive.
- Encourage personnel at grassroots levels and in direct program service capacities to pursue wildfire research projects in which they set up studies in their own programs and with their own clients to obtain answers to their own questions and problems.
- Emphasize applied research through demonstration projects and activities that can be generalized and utilized in similar programs and activities.
- Investigate relative effects and effectiveness of play, free play, and progressively structured play situations upon total growth, development, and progress of individuals with various handicapping conditions; consider all domains in such investigations.
- Continue to explore and investigate effects of categorical labeling and generalizations in institutionalization and other dehumanizing activities upon growth and development of individuals with various handicapping conditions.
- Use more fully information, input, and research/experience evidence from other disciplines and fields such as nutrition in programing and meeting needs of participants through physical education, recreation, and related programs.

- Address basic question that assumes children not progressing or achieving in school are at fault and basic cause of problems rather than contributions of irrelevant curricula, uninspiring teachers, and society itself.

- Determine specific contributions of physical activities, movement, motor activities, play, and recreational pursuits upon improved socialization and social function of impaired, disabled, and handicapped persons.

- Encourage more longitudinal and reverse longitudinal studies in which individuals and groups are studied from the present back through events, activities, and experiences that affected their growth, development, and achievement positively as well as negatively.

- Reconsider applicability and appropriateness of research techniques, approaches, and designs effective in the physical sciences as modus operandi in the behavioral sciences.

- Assess what is happening to as well as for participants through ancillary remedial services in terms of how each participant feels and perceives these efforts, programs, and activities.

- Encourage greater international exchange and interchange.

- Investigate exact cause and effect relationships related to specific physical activity, motor/movement, and recreational programs and activities for individuals with various handicapping conditions.

Mid Level

- Explore various physiological parameters in terms of effects/contributions/values of certain programs, activities, modalities for participants with various handicapping conditions. Investigate through myographical studies functional use of specific muscles and muscle groups in relation to activities in which individuals with various handicapping conditions participate.

- Ex lore efficacy of applying the IRUC dissemination/distribution referral system and model to other education/special education information/material collection/retrieval/dissemination procedures.

- Investigate role and potential of biofeedback techniques in treatment, rehabilitation, and therapeutic programs or individuals with various handicapping conditions. Explore use and benefits of approaches applied in transcendental meditation, yoga, relaxation techniques in working with these same individuals.

- Evaluate large amount and great variety of program materials in terms of their effects on children/populations each item is designed for use.

Personnel Preparation

High Level

- Compare relative effectiveness, efficiency, and competence of personnel at all program levels trained in college/university settings with persons receiving greater amounts of field opportunities and experiences.

- Encourage in depth practicum/practical/field experiences throughout every student's college/university preparation to give greater meaning and significance to class and theoretical activities for application in the real world.

- Explore need for special certification in adapted physical education for teacher specialists, resource personnel, and supervisory personnel.

- Determine course/competency needs for all school physical education teachers and community recreation personnel to enable them to deal with special populations in regular program settings.

- Explore ways in which college/university personnel can return periodically to field positions in an exchange system where field personnel have opportunities to interact more directly with college/university staff and students.

- Involve administrators in meetings, conferences, workshops, and conventions dealing with various aspects of special education, physical education/adapted physical education, recreation/therapeutic recreation, and related activity areas for special populations. Present programs and sessions dealing with these topics at conferences, conventions, and other meetings sponsored by associations of administrators and supervisors at national, regional/district, state, and local levels.

- Ascertain accurately personnel needs in physical education/adapted physical education, recreation,therapeutic recreation, and related areas in all program environments and settings at national, regional, state, and local levels.

Mid Level

- Determine ways in which school personnel who provide athletic training services as cocurricular responsibilities can and do participate in adapted/corrective/developmental physical education programs/activities. Review and develop college/university preparation opportunities related to these expanding possibilities.

- Compare effectiveness and efficiency of undergraduate and graduate specialization programs in adapted physical education, therapeutic recreation, and related areas for impaired, disabled, and handicapped populations. Consider ways to retrain experienced teachers and leaders already in the field in terms of (1) competencies necessary to deal with impaired, disabled, and handicapped individuals in regular and/or special programs, and (2) new and emerging roles for both generalists and specialists in these areas.

- Assess personal characteristics and traits that have made volunteers of all ages effective in working with individuals having various handicapping conditions.

Services

High Level

- Encourage more generalized use and application of individualized, prescriptive, and diagnostic teaching techniques and approaches popularized through special education in general education programs and settings to make education for all in least restrictive environments reality.

- Clarify intent of litigation and legislation mandating education for all in least restrictive environments so that continuum of services and flexibility in their administration are emphasized in terms of meeting individual needs of each student. Consider in this process the many variations intended and implied through the normalization process including integration of small numbers of nonhandicapped persons into programs and activities in which individuals with various handicapping conditions remain the majority.

- Utilize fully performances, successes, and achievements in all aspects of physical education, recreation, sports/athletics, and related areas to bring about changes in attitudes and expectations of what impaired, disabled, and handicapped persons can do among the general population.

- Capitalize fully upon impact and potential of comprehensive recreational programing in promoting and maintaining high quality life of each individual in terms of abilities, impairments, interests, experiences, and opportunities.

- Promote greater interfacing, interacting, cooperation, and coordination among all information systems, resource centers, and materials networks to reduce unnecessary, unwarranted, and unproductive duplication of effort.

- Promote efforts to enforce existing federal, state, and local laws, rules, and regulations as they apply to all aspects of programs and activities for special populations.

- Develop better and more effective communication system about professional and paraprofessional positions at national, regional, state, and local levels in these areas of concern.

- Maintain specialized center such as IRUC to provide centralized coordination of collecting, reviewing, analyzing, evaluating, interpreting, packaging/repackaging, and disseminating child use, professional, and technical information and materials in these areas of concern.

- Place greater emphasis upon meeting needs and attacking problems as close to the local program level as possible.

Additional Considerations

Several factors continue to complicate and create confusion among individuals and organizations involved in various aspects of physical education, recreation, and related programs for impaired, disabled, and handicapped persons. These areas also need intelligent, cooperative, and unemotional thought and action.

- Make conscientious efforts to eliminate confusion in terminology and semantics rampant in physical education, recreation, special education, and related disciplines and specializations where the same words are used for different concepts and different words used to mean identical concepts.

- Recognize that individuals and representatives of organizations and agencies functioning at different levels and in quite different situations have very different needs, problems, and concerns. Each perceives priorities differently and presents ideas in terms of their perceptions of situations and circumstances. This is not a question of an individual or group being right and others wrong, but rather correct perceptions based on quite different experiences and needs. Often these differences lead to conflict and even open hostility that impedes and restricts program efforts for individuals and groups all are dedicated to serve. Procedures and processes for recognizing all of these different needs and in developing coordinated strategies and courses of action at national, regional, state, and local levels are of major importance today. These approaches are necessary to reduce or eliminate unnecessary and unwarranted duplication of effort, waste of resources, and to meet needs of impaired, disabled, and handicapped persons in regular and/or special programs and activities.

- Emphasize consumer advocacy where individuals with various handicapping conditions serve as their own spokespersons, especially at the important and crucial decision and policy-making levels. Too much lip-service is given this concept; as a result most representation is of a token nature. Because of such actions, impaired and disabled individuals are becoming increasingly militant in demands for representation on planning boards, executive committees, and advisory groups. They are demanding to have input and say in decisions that so intimately affect their lives and their very destinies. Since individuals responsible for so many programs do not solicit and obtain this type of input, activities and approaches abound that collectively and individually impaired, disabled, and handicapped persons do not want. Forward thinking people and progressive programs and groups providing physical activity, recreational, and related services for special populations must consider having a majority or consumers on governing and policy making bodies. They have previously asked and now they are demanding such representation. In areas of the country where greatest progress has been made, direct involvement of consumers has been and important factor.

- Recognize differences in patterns within special education, physical education, and recreation regarding emphasis on movement, motor, physical, and recreational activities in programs for impaired, disabled, and handicapped persons. In general, grassroots practitioners from special education continue to place greater emphasis and give higher priority to these areas than their college/university colleagues. On the other hand, college/university personnel in physical education and recreation are more supportive and involved than their grassroots counterparts. While these patterns are gradually changing, they are still observable and definitive trends.

PROFESSIONAL PREPARATION OF PERSONNEL INVOLVED IN PHYSICAL EDUCATION AND RECREATION FOR THE HANDICAPPED

State of the Art

To provide a national view of the state of the art in professional preparation of personnel involved in physical education and/or recreation for persons with handicapping conditions, it is necessary to analyze primary factors and forces affecting these areas. Some factors having greatest impact on such preparation are:

(1) demand for assistance from personnel in the field,
(2) mainstreaming efforts,
(3) state legislation and special education master plans as each relates to training/education,
(4) litigation to obtain mandated special education services for students,
(5) federal funding of training programs,
(6) emphasis on retraining surplus teachers in regular physical education to work with special populations, and,
(7) non-traditional training approaches such as cadre team training and competency-based professional preparation programs.

This analysis considers high priority training needs that have been suggested for the immediate future such as preparing personnel to work with severely and profoundly mentally retarded and multiple handicapped persons, individuals with learning disabilities, and at the early childhood level. This analysis also includes representative models of personnel preparation which have implications for developing future training systems. Hopefully, this information provides understanding of what's going on nationally and gives direction for future professional preparation programs.

Practitioners such as classroom teachers, physical education teachers, and recreation personnel increasingly are demanding aid for providing services for individuals with various handicapping conditions who are mainstreamed into their programs* due to (1) state legislation mandating educational services for all children regardless of type or severity of handicapping conditions, (2) demand by handicapped consumers and their advocate groups for equal educational services, (3) trend toward physical education electives and/or selective requirements at the secondary level, and (4) an apparent increase in corrective physical education in public schools. In addition, physical education teachers are being affected by revised organizational, administrative, and financial procedures that are making them increasingly responsible to special education departments. In special facilities, day care/activity centers, and residential settings, practitioners desire additional assistance in programing to meet the needs of severely and profoundly mentally retarded and multiple handicapped persons. Both legislation and litigation are resulting in larger numbers of participants in recreation programs and activities, regardless of type or severity of their conditions or environmental setting. For example:

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*Needs assessment activities and tabulation of inquiries for assistance from personnel who contacted IRUC during 1972-74 indicated that individuals with learning disabilities, subaverage intellectual functioning, and other handicapping conditions were being mainstreamed into these programs.

- Willowbrook State School (New York) is involved in litigation in which appropriate treatment and educational services--including recreation--for residents of that facility are being demanded.

- The Fifth Circuit Court of Appeals[1] ruled recently that the U. S. Constitution guarantees right to adequate treatment for mentally ill and mentally retarded residents at Bryce Hospital, Tuscaloosa, Alabama. (Wyatt v. Aderholt). Although specific treatment services to be provided were not spelled out in the ruling, the obvious implications were that recreational services should be included in the treatment program.

- Legislative authorizations in several states (Massachusetts, New Jersey, Illinois) provide special funds and/or specific procedures whereby communities can obtain financial support for recreation programs involving impaired, disabled, and handicapped persons.

Other factors increasing the number of individuals with handicapping conditions participating in regular, ongoing programs are normalization and deinstitutionalization processes. Normalization legislation in the Scandinavian countries since the 1960's has resulted in movement of mentally retarded individuals from residential situations to hostels, group and foster homes, special community programs, and apartments. Deinstitutionalization procedures in many states are causing large numbers of severely and profoundly mentally retarded residents in state hospitals and schools to move into community living facilities. These impaired, disabled, and handicapped individuals who are placed in the community are being integrated into community recreation programs and increasing the demand for assistance from recreation personnel.

Contributions of physical education, recreation, and related activities toward total development of individuals with handicapping conditions have been recognized and increasingly emphasized in overall education, training, habilitation, and rehabilitation programs. Realization of benefits provided by physical and recreational activities has resulted in tremendous impact on status and quality of programs in physical education, recreation, and related areas for impaired, disabled, and handicapped persons in both separate and integrated situations.

Large numbers of children and youth with handicapping conditions are being enrolled in public schools due to state legislation and litigation mandating education for all in least restrictive environments and zero-reject principles as they apply to rights of handicapped children to education.[2] Increasingly, state laws mandating education for all children and youth, usually from ages two or three to twenty-one regardless of type or severity of handicapping conditions are being enacted.* An IRUC analysis of laws and provisions[3] for physical education in public schools applicable to students with handicapping conditions indicated that physical education is a part of education that has been and should be required for all students. In addition, reports from the Education Commission of the States indicate that a high percentage of state governors has given highest priority to programs for handicapped persons.

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*An extensive analysis of state legislation, federal law and litigation relative to education of handicapped children is contained in an article by Alan Abeson, "Movement and Momentum: Government and the Education of Handicapped Children-II", Exceptional Children 41:2: 109-115; October 1974.

In some state legislative mandates, physical education, recreation, camping outdoor education, and other nonacademic areas are specifically designated in goals, guidelines, and criteria for implementation.[4] Legislative authorizations in several states--i.e., Massachusetts, Illinois, New Jersey--provide special funds and/or specific procedures whereby communities can obtain financial support for recreation programs for individuals with handicapping conditions.[5] Personnel responsible for planning, implementing, and evaluating programs to satisfy these mandates urgently need additional competencies that can be obtained through personnel preparation teacher training systems.

From Fall 1973, when the Information and Research Utilization Center in Physical Education and Recreation for the Handicapped (IRUC) activities and publications were first widely and specifically publicized, to June 29, 1974, IRUC received 1,466 requests for information; this figure does not include requests made directly from other agencies for IRUC materials. Requests were received in two forms: (1) roughly half (750-51.8%) on the IRUC brochure Request for Information form; (2) the remaining half (716-48.2%) in the form of letters and telephone calls. Approximately two-thirds (1,031-70.3%) of these requests came from the field; the remaining one-third (435-29.7%) came from staff and students in college/university professional preparation programs. The majority of requests for information from the field fell into these categories:

(1) Recreation/Park - approximately 250 from activity directors/coordinators, community recreation personnel, recreation consultants, program coordinators/directors.
(2) Physical Education - approximately 150 from teachers, supervisors, coordinators, consultants.
(3) Special Education - approximately 150 from teachers, supervisors, coordinators, consultants.
(4) Special Group - approximately 150 from Associations for Retarded Children, Associations for Children with Learning Disabilities, Easter Seal Societies, Boy Scouts, Government Agencies.
(5) Facility Personnel - approximately 150 from principals, directors, psychologists, counselors.
(6) Others/Miscellaneous - approximately 100.

A slightly different trend appeared with requests for information from persons in college/university professional preparation programs. Those coming from the area of physical education (166) equaled approximately twice the number coming from either recreation (74) or special education (87). Again, sources could not be identified for purposes of categorization for a number of requests (63).

Requests for information clustered around programing in recreation and physical education for individuals/groups possessing all handicapping conditions. The vast majority of requests (exceeding any other category by several hundred) was of a general nature--they neither identified a specific population group nor a specific activity. Physical educators generally asked for information about (1) activities, (2) research, and (3) guidelines for adapted physical education, perceptual-motor, and recreation programs (in that order). Recreation personnel generally requested information about (1) adapting physical activities, (2) guidelines for setting up community recreation programs, and (3) general recreation program ideas (in that order).

Specific program areas identified ranged in frequency from 130 to 18 with a mean of 54.5 These program areas in order of greatest to least frequency were: (1) perceptual-motor, (2) aquatics, (3) creative arts (i.e., arts, crafts, dance, drama, and music), (4) camping and outdoor education/recreation, (5) developmental motor skills, (6) physical fitness, (7) sports and competitive athletics, (8) lead-up and low organized games, (9) leisure education/counseling, (10) social recreation and, (11) special events. Total requests in the general categories of recreation and physical education activities were over twice totals of all specific program areas identified.

Relative to handicapping conditions, the total of all specific conditions equaled over twice the total in the general category of all/any handicapping conditions. Information for programing for individuals with mental retardation was requested twice as often as information for any other condition. For conditions specified, frequencies ran from 444 to 36 with a mean of 127.3. Conditions identified included: (1) mental retardation, (2) physical conditions, (3) emotional disturbances and/or psychoses, (4) severe/profound mental retardation, (5) learning disabilities, (6) cerebral palsy, (7) multiple handicapping conditions (deaf-blind mentioned most often), (8) blind, (9) deaf, and (10) other health impairments (i.e., cardiac conditions and asthma). Information was also requested for program information and assistance for individuals with handicapping conditions in pre-school and adult age ranges.

Demand for information and assistance reflected by preceeding statements about state legislation and from inquiries submitted by practitioners is further supported by apparent needs for relevant training/retraining systems to provide requisite knowledges, skills and competencies.

- Activities carried out by IRUC for state-of-the-art analyses, state surveys to identify resource programs and personnel and a survey of professional preparation programs [6] reveal a high priority for these training/retraining systems to meet demands of personnel in the field and to fill gaps or voids now present. For example, training related to physical education, recreation, and related activities for severely and profoundly mentally retarded persons, multiple handicapped individuals, learning disabled persons and handicapped children at the preschool level is greatly needed. In addition, specific problems, concerns, and needs identified through input from basic questionnaire results and personal contacts with IRUC staff indicate need for training programs and practicum/field/internship experiences.[4]

Additional support for the need for relevant training/retraining for physical education, recreation, and related personnel who plan, conduct, supervise, and evaluate programs for impaired, disabled, and handicapped persons was reported from such professional conferences as Study Conference on Research and Demonstration Needs in Physical Education and Recreation for Handicapped Children[7], Study Institutes to Develop Guidelines for Professional Preparation Programs for Personnel Involved in

Physical Education and Recreation for the Handicapped[8], and Conference on Leisure Time Activity for the Handicapped.[9] This training/retraining is urgently needed in the following areas:

- Early Childhood -- One of the strongest educational trends in recent years has been that of early childhood development.[10] Not only are more and more preschool programs developing in the mid-1970's, [11] but current projections indicate an increased emphasis on the early years of children occuring in future educational and training programs. U. S. Department of Commerce Census Bureau projections for the under five population range from 18.8 million to 21 million by 1975; 20.5 million to 27 million by 1980; 20.8 million to 30 million by 1990. [12] This trend has direct implications for physical educators and recreation personnel. It is recognized that the majority of a child's early learning experiences is largely motor or physical in nature; therefore, physical education and recreation personnel have a responsibility to provide appropriate activity programs for children at these younger age levels.

- Multiple Handicapped -- During recent years, an increase in number of multiple handicapped children has been noticed with a resulting increase in number of programs developed or expanded for individuals with such conditions. Because of this, numerous requests have been received by IRUC for information on physical education and recreation programs, methods, and activities for multiple handicapped individuals. An extensive analysis of related literature, bibliographies, project reports, books, guides, manuals, and data retrieval system printouts was reported by IRUC.[13] Some observations based on analysis of information included. [14, 15, 16]

  --the rubella epidemic around 1964 resulted in increased multiple handicapping conditions in children born at that time; therefore, future educational programing, including physical education and recreation, should take into consideration the increased numbers of students who will be enrolled in school and community programs.

  --limited program information concerning physical education and recreation for multiple handicapped persons is not adequate for needs of practitioners in the field who are demanding assistance for participants in their programs.

  --an urgent need for inservice and preservice training in this subject area.

- Severely and Profoundly Mentally Retarded -- Due to demand for program information from physical education, recreation, and related personnel who work with increasing numbers of severely and profoundly mentally retarded participants, IRUC staff extensively analyzed related literature and interpreted data for an IRUC publication. [17] This analysis revealed that little printed material is available to assist these practitioners; implications indicated that relevant training/retraining systems need to be provided. IRUC projects currently being processed concerning state-of-the-art and priorities identified in this subject area also indicate that such training/retraining is needed.[18,19] A conference to be sponsored by the National Association for Retarded Citizens in April, 1975, is to include a focus on an interdisciplinary approach to preparation for personnel who provide education/training services for severely and profoundly mentally retarded persons. Needs of resource personnel and competencies of people, such as ward personnel, cottage parents, and recreation leaders providing physical education and recreation services are to be considered.

- Retraining of surplus teachers -- A current emphasis is upon retraining surplus generalist physical education teachers so that they are able to work with special populations.

- Mainstreaming -- An IRUC publication[19] contains extensive analysis of research and program literature relative to integrating individuals with handicapping conditions into physical education and recreation programs for non-handicapped persons. Conclusions included:

--mainstreaming in regular public school physical education, athletic, and intramural programs is feasible and desirable in certain circumstances; current and impending state legislation for mandatory physical education for all public school students creates an urgent need for additional literature on this topic.[20,21,3]

--successful integration into community recreation programs is possible in different situations; more research data and program literature are needed because of increased programing as a result of consumer advocacy, deinstitutionalization policies, and normalization procedures.[22,23,24,25,26,27]

--integration into ongoing normal camp situations has been successfully attempted; increased activity will probably continue in the future.[28,29,30]

Suggestions and priorities given in this analysis included:

--develop and implement pre and inservice training models for physical education, recreation, and related personnel who are to be involved in integrated programs.

--plan future programs allowing for possibility of increased numbers of participants with handicapping conditions due to mainstreaming trend. 31,32,33,34,35,36,37

Another indication of priority placed on the mainstreaming or integrating approach is reflected in content of two conferences -- American Foundation for Blind/National Therapeutic Recreation Society Workshop for Therapeutic Recreation Educators and President's Committee on Employment of the Handicapped/National Recreation and Park Association National Forum on Meeting the Recreation and Park Needs of Handicapped People -- in which this topic was highly emphasized and need was expressed for training systems to provide competencies for mainstreaming/integrating handicapped individuals into ongoing programs.

- Learning Disabilities -- Analysis of research data and program experiences about physical activity, perceptual-motor, and recreation programs for children with learning disabilities indicated that specific physical/motor activities can contribute to alleviating specific learning problems.[38] At the present time, much literature is available on the subject of motor activities for children with learning disabilities; however, many controversies exist concerning such factors as interpreting results of previous research studies, validity of perceptual-motor programs and assessment techniques, research design and semantic difficulties. Information available at this time from a current IRUC state-of-the-art project regarding learning disabilities indicates that personnel in the field need assistance in order to provide appropriate perceptual-motor programs and activities;[6] this training/retraining is a priority identified and will be included in this report.

- Athletic Training -- During recent years, there has been a demand for certified athletic trainers at the high school level. Athletic trainers are described by The National Athletic Trainers Association as instructors who are medical technicians working directly under the supervision of a team physician and in cooperation with the coaching staff and administrators of their schools. Athletic trainers are in demand due to increasing numbers of injuries sustained by students participating in interscholastic sports. In some instances, the trainers provide adapted and/or corrective physical education services. Accordingly, demand for professional preparation in athletic training is evident at the present time; proposed and pending federal legislation indicates that this demand will probably increase greatly in the near future. Athletic trainers are already mandated in Texas high schools; some individual schools and school systems around the country have already recognized this need and added athletic trainers to their staffs.

- Change in Job Roles and Functions -- Recognition must be given to the trend in which many traditional job roles and functions change or are modified in the physical education/adapted physical education and recreation/therapeutic recreation fields. For example, at Willowbrook State Hospital (New York) individual units are becoming more autonomous and decentralized from central services departments. At other state schools/hospitals (Partlow, Alabama; Denton, Texas; and Ellisville, Mississippi), central services departments have been eliminated altogether. This results in needs for such additional competencies as organization and administration, staff management, program planning, fiscal planning and management, skills and knowledge of resources on the part of recreation leaders and additional competencies for providing recreational activities on the part of ward personnel and cottage parents.

Additional support and evidence of type of training/retraining systems needed are contained in recommendations of the Congressionally mandated Bureau of Education for the Handicapped (BEH) Advisory Committee on Physical Education and Recreation for Handicapped Children:

- The Committee is most concerned that the supply of qualified physical educators and recreators be increased; that new patterns of training be investigated; that physical education and recreation programs and personnel be considered a component of educational delivery service to the handicapped; and that all special and other regular educational personnel receive a better understanding of physical education and recreation programs for the handicapped. Within manpower development and training programs, priority attention should be directed toward:

  --coordinated planning for training specialists in physical education and recreation for the handicapped at all levels of professional preparation.

  --including in all regular physical education, recreation, and special education training programs specific content oriented toward the handicapped.

  --providing inservice training experiences for all personnel.

- The Committee recommends that all programing for the handicapped define educational opportunities to include physical education and recreation experiences and that these experiences not be limited to those available within the scope of a formal traditional school program. Within this context we further recommend that:

  --public and voluntary recreation and/or parks departments and agencies are seen as legitimate participants in the BEH support programs designed to develop and expand programs and services related to recreation for handicapped children.

  --physical education is an integral part of total school program experiences for all handicapped children.

The preceding discussion documents need for training systems for physical education, recreation, and related personnel who provide services for impaired, disabled, and handicapped children and youth. Training approaches should be developed in terms of regional/state needs. Recommendations were made at 1971 regional workshops where individuals, official agency representatives, and staff, officers, and members of associations indicated they want, need, and endorse multiagency, interdisciplinary teamwork, cooperation, and coordination of programs, projects, and activities to serve best those populations with which all are mutually concerned. Regional/state training/retraining approaches utilizing Area Learning Resource Centers (ALRC) and Regional Resource Center (RRC) networks were also recommended during a 1974 regional conference held in Utah concerning The Severely, Multiply Handicapped - What Are the Issues?[39] These training/retraining systems should be based upon the changing concept of education in which programs consist of activities ranging from self-care to academic skills; no artificial dichotomy is any longer made between training and education.

Professional preparation programs that are developed should also take into consideration previous and ongoing types of workshops, seminars, symposia, orientation sessions, inservice training institutes, and conferences on the subject:

- Bureau of Education for the Handicapped (BEH) sponsored five special regional workshops to identify training needs and develop plans to meet these needs in each state. State teams consisted of one representative from each area--physical education, recreation, and special education.

- Meetings sponsored by Texas Association for Retarded Citizens (funded under Developmental Disabilities Act) brought together representatives of (1) colleges and universities, (2) public education, (3) mental health/mental retardation boards, (4) service/civic/volunteer/parent groups, and (5) community recreation departments and park boards to improve communication, find more and better ways to work together, and develop a coordinated and unified state plan based on interagency and multidisciplinary action and activities to meet needs of impaired, disabled, and handicapped persons through physical education, recreation, camping, and related programs. Training and professional preparation programs and activities were major considerations in these deliberations and have received high priority in follow-up projects and meetings.

- Barn-storming or mobile workshops have been conducted where an individual or team conducts one-day drive-in sessions in population centers through-out a state (Hawaii, Mississippi, Alabama, Wisconsin). Special mobile units in physical education and recreation for mentally retarded persons and those with various handicapping conditions have been sponsored by Kentucky and Oklahoma Associations for Retarded Citizens. Services have included short term workshops in communities, at schools, for residential facilities and day care/activity centers, at colleges and universities, and for other interested groups. Special vans also serve as mobile resource centers with books, reprints of articles, pamphlets, brochures, equipment, supplies, special information sheets, and other physical education and recreation program materials.

- Developmental clinics sponsored or co-sponsored by colleges and universities (i.e., Maryland, Texas, Utah, Texas Woman's, Prince Georges Community, South Florida, Lock Haven) and parent associations (i.e., Northern Virginia Association for Children with Learning Disabilities, Dallas Association for Retarded Citizens) serve children with physical and motor problems and provide practical experiences for students in specific curricula and courses as well as opportunities for student volunteers.

- Seminars jointly sponsored by Southern Regional Education Board, The Joseph P. Kennedy Jr. Foundation, and AAHPER included representative teams from 15 southern states. These leadership teams consisted of personnel from divisions of physical education and special education from State Department of Education/Public Instruction, planners from Mental Health/Mental Retardation Boards, and individuals from departments of physical education and special education in colleges/universities with major programs in both areas. Important outcomes from these seminars included plans based on needs and priorities of each state and a series of workshops in each of the states.

- Coordinated efforts within, between, and among the six AAHPER geographic areas have been established through coordinators in each of the Districts. Workshops (Eastern District) and special convention programs (Southern District) are being implemented through joint efforts of these coordinators in cooperation with staff personnel of the Unit on Programs for the Handicapped and IRUC.

- Seminars sponsored by Buttonwood Farms-Temple University Project (Philadelphia) and training programs at the Children's Rehabilitation Center, University of Virginia Hospital (Charlottesville) involved college and university level professors who were given advanced training for their roles as trainers of teachers in adapted physical education and therapeutic recreation.

- Cadre team training approaches developed in Project ACTIVE (New Jersey) prepare resource personnel to serve as trainers of teachers who conduct adapted physical education programs. Projects DISCOVER and I CAN (Michigan) emphasize inservice training opportunities and experiences for classroom teachers, special programs, educators, physical educators, and other personnel for outdoor education involving children with various handicapping conditions and for physical education programs involving moderately (trainable) mentally retarded students in both regular and special schools. Project AQUATICS (Washington) is currently emphasizing leadership development for the full range of aquatic and swimming activities for impaired, disabled, and handicapped participants.

- State Associations for Health, Physical Education, and Recreation (i.e., Colorado, New Hampshire, New Jersey), State Federations of Exceptional Children (i.e., Washington, Georgia, Oklahoma), various colleges and universities (i.e., North Dakota State, University of South Dakota, University of Southern Mississippi), State Departments of Education (i.e., Pennsylvania, Iowa, New York), residential facilities (i.e., Ellisville, Mississippi; Willowbrook, New York; Pineville, Louisiana), and special interdisciplinary groups (i.e., California Alliance; Loudoun County(Virginia) Mental Health/Mental Retardation Board) are representative of many different groups that have sponsored a variety of formal and informal credit and noncredit inservice programs, orientation activities, and training/retraining projects in physical education/adapted physical education, recreation/therapeutic recreation, and related areas for persons with handicapping conditions.

Prototypes of some previous and ongoing college/university professional preparation programs for personnel involved in physical education and/or recreation for individuals with handicapping conditions were reviewed. Some findings of this review included:

- Categorical approaches are strongly emphasized.

- Many programs cover only a few handicapping conditions such as mentally retarded, physically handicapped, emotionally disturbed, or perceptually involved.

- Most programs emphasize traditional course work such as physical education for the mentally retarded, adapted physical education, or physical education for orthopedically impaired.

- Many programs stress rehabilitation or remedial activities.

- Types of preparation range from providing one course to an intensive specialization including many courses; a variety of majors, minors, concentrations, options, and/or specializations are offered.

- Training levels range from paraprofessional to doctoral programs. Two year, four year, and graduate programs are offered. Innovative two year programs are provided at (1) University of Illinois, Champaign-Urbana (development of two-year curriculum in therapeutic recreation for use in junior colleges to prepare entry level personnel), (2) St. Gregory's College, Shawnee, Oklahoma (physical education and recreation for the mentally retarded technician program), and (3) Prince Georges and Essex Community Colleges, Maryland (developmental clinics).

- Students pursuing graduate level programs usually are prepared to be specialists; undergraduate programs usually offer minor emphasis areas or options--some institutions offer specializations at the undergraduate level.

- A wide variety of training approaches is apparent ranging from traditional to more flexible, i.e, competency based curricula.

- Semantic problems cause confusion in descriptions of professional preparation programs. Terms such as adapted physical education, special physical education, physical education for the handicapped, or developmental physical education are used in degree programs in different institutions of higher education even though rationale, scope, and content of programs are similar. Conversely, the same term, such as adapted physical education is employed by many schools to describe programs that are not similar.

- Interdisciplinary approaches are becoming more prevalent.

- Practical or laboratory work is frequently included in programs.

In 1970, Ersing and Wheeler[40] conducted a national survey of 312 institutions with professional preparation programs in physical education as approved by the National Council for Accreditation of Teacher Education; several interesting trends in teacher preparation programs in adapted physical education were revealed. Of 178 (57%) institutions responding, 24 (13%) indicated they offered a professional preparation curriculum to prepare specialists in adapted, remedial, corrective, special, or therapeutic physical education; 122 (69%) indicated they provided courses but no curriculum leading to this type of specialization; and 32 (18%) stated they offered neither a curriculum nor professional preparation courses in the area. Some conclusions which may have relevance to future curriculum development included:

- There seems to be no single approach to preparing specialists in physical education for the handicapped; titles and content of programs are evidence of this diversity.

- Opportunity for specializing in adapted physical education seems to be equally available at undergraduate and masters degree levels.

- Undergraduate programs seem to provide little in-depth study in adapted physical education.

- The idea that adapted physical education is primarily therapeutic or rehabilitative in nature is still characteristic of some programs and courses.

A comprehensive review of issues and trends in training adapted physical education personnel was reported in 1972 by Winnick[41] who discussed disadvantages of the traditional medical/pathological categorical approach in programs, licenses, degrees, courses, units, classes, schools, university faculties, and state and federal funds. Review of models developed by institutions of higher education which received monies for planning prototypes in physical education and recreation for handicapped individuals funded by the Bureau of Education for the Handicapped revealed that the categorical approach was widely employed. Recommendations made by Winnick relative to developing future models included:

- Focus on individual needs, interests, and abilities of children.

- Focus on experiences relevant and meaningful to education in general and physical education in particular. These experiences should be developed and be in concert with the theoretical framework of allied disciplines, especially special education.

Johnson (1975)[42] developed a score card for self-appraisal of graduate professional preparation programs for adapted physical education specialists which is designed for use by physical education administrators and/or faculties at institutions of higher education. The score card was developed from a check sheet listing program components which had been rated by a panel of experts in adapted physical education. The criteria are stated for four basic areas: General Institutional and Departmental Practices, Graduate Faculty Standards, Graduate Student Standards, and Instructional Program.

In 1963, Hooley[43] conducted a survey to determine state certification requirements and course work practices in preparing adapted physical education teachers. Questionnaires were sent to Educational Directors in each of the 50 states of the United States and to Directors of Physical Education in every institution accredited by the National Council for Accreditation of Teacher Education which offers degrees in Health, Physical Education, and Recreation. Conclusions made from data obtained from 47 states and 421 Directors of Physical Education included:

- Adapted physical education courses for undergraduate majors tend to exist more often in states which require such courses for certification in physical education than in states where institutions have relative autonomy in curricular matters.

- Those who believe in teaching adapted physical education courses to undergraduate majors in physical education feel that such courses must include field work with the handicapped.

- Many corrective physical education courses are taught; some of these stress the therapeutic viewpoint toward physical education which was held years ago when doctors of medicine and physical therapists led the profession of physical education.

Hooley[44] conducted another national survey in 1974 concerning state requirements or recommendations regarding adapted physical education teacher training. Responses from 50 states indicated that thirteen states required an adapted physical education course, sixteen states recommended such a course and twenty-one states neither required nor recommended such a course. Sixteen states included field work in this course while six states did not include field work. Eight states gave confusing responses which did not permit accurate interpretation regarding field work, ten states did not reply to the question, and ten states indicated that such practical work was discretionary. A wide variety of names were used to describe the course; however, the name most widely employed was adapted physical education.

In 1973, IRUC conducted a survey of states in the nation regarding provisions and regulations for physical education for the handicapped.[3] Data revealed a total of 27 states which made provisions for providing adapted physical activities to children with handicapping conditions; an additional two states recommended such activities. These provisions did not always cover all aspects of adapted physical education nor were all handicapping conditions included. Only 12 states required physical educators working with children with handicapping conditions to have special preparation; even these requirements were not always inclusive of all aspects of adapted physical education for all handicapping conditions.

Currently, much activity relative to state certification, professional preparation programs, state plans, professional groups, and federal funding is apparent:

- Increased number of undergraduate and graduate professional preparation programs in physical education and recreation for handicapped persons in addition to several programs at the paraprofessional level. Many of these programs employ a categorical approach with options or concentraions at undergraduate levels and majors or specializations at graduate levels. (See Appendix A for Listing of programs).

- Increased funding of such training programs by Division of Personnel Preparation, Bureau of Education for the Handicapped (BEH). During 1974-75, 39 training programs and eight special projects (See Appendix A for listing) were funded by BEH: with the exception of special projects, primary emphasis has been at the graduate level.

- High priority on developing comprehensive state-wide plans for delivery of special education, physical education, and recreation services. BEH has initiated a series of state meetings involving personnel representing institutions of higher education, state education agencies, and local education agencies for these planning efforts. Applicants for new training grants funded by Personnel Preparation, BEH, must now show documented evidence of involvement in their state plans.

- Formation of the National Ad Hoc Committee on Physical Education and Recreation for Handicapped Children. This professional group has a membership consisting primarily of Project Directors of BEH funded training programs in physical education and/or recreation. Professional meetings and newsletters center on topics such as physical education and recreation programs for the handicapped, legislative support for these programs, and exchange of information among BEH Project Directors.

. Revision of the Council for Exceptional Children model legislative statute related to physical education and recreation for the handicapped. The model law for special education which was developed by the Council for Exceptional Children is to be revised by Fall, 1975; total program services for education and training--self-help to academic skills--are to be presented with statements regarding physical education and recreation included.

. Emphasis upon registration of therapeutic recreation personnel. The National Therapeutic Recreation Society (NTRS) of The National Recreation and Park Association (NRPA) has a voluntary registration program for therapeutic recreation personnel. Some agencies require either actual registration for recreation personnel or that they be eligible for such registration. In some specific circumstances such as nursing homes, federal laws require recreation personnel to be registered or registration eligible. To date, however, few college/university professional preparation programs for recreation personnel emphasize or lead to registration. In 1974, NRPA formed a Council on Accreditation to develop an in-house accreditation program that will include the NTRS branch. Standards and evaluative criteria previously developed by NRPA Board on Professional Education will be reviewed by the Council in cooperation with the Therapeutic Recreation Education Standards Committee. In addition, a Priority Project on Therapeutic Recreation Standards and Accredition, NTRS, is currently developing guidelines for therapeutic recreation curriculum. It is expected that the accreditation program and the curriculum guidelines that will evolve from this activity will be of assistance to colleges/universities in improving the quality of therapeutic recreation professional preparation programs offered.

. Various teacher certification provisions or requirements in certain states. Some certification requirements directly or indirectly affecting physical education teachers, special educators, or others responsible for physical, motor, movement, and related activities include:

(1) a regulation that all teachers in Missouri, Georgia and Colorado have at least one survey course in special education for exceptional children,
(2) a requirement in Pennsylvania that teachers of physical education under comprehensive special education legislation be certified in both physical education and special education,
(3) special certification in California for teachers of remedial physical education for physically handicapped minors,
(4) specific mandates becoming effective in September 1975 in New Jersey that provide for certain minimum competencies/courses for adapted physical education teachers,
(5) deliberations in New York to develop and reinstitute special certification in adapted physical education,
(6) flexibility in many comprehensive special education laws making it possible to include corrective, physical, occupation, recreation, dance, music, and related therapists as support personnel who have to satisfy criteria of their respective specialization but not teacher certification requirements,
(7) increasing use of aides, assistants, and other paraprofessional personnel in all special education activities including physical education, and,
(8) recertification and inservice requirements in many states to keep teachers up-to-date.

Areas in need of investigation and follow-up action include:

(1) minimum competencies courses in adapted physical education and/or special education for all physical educators,
(2) specific certification for teacher and resource specialists in adapted physical education including remedial/corrective and developmental components, and,
(3) minimum competencies/courses in physical education, motor development and related areas for all special educators.

With increased specific certification requirements in or for adapted physical education, the need for trained teacher specialists could be expected to increase dramatically.

A deterrent to coordinated action in some states involves terminology. Adapted physical education is considered the province of physical educators and physical education for the handicapped of special educators. This creates many problems such as certification solely in special education to teach physical education to children with various handicapping conditions under comprehensive special education legislation in Texas, and failure to include physical educators on diagnostic teams, certification-admission-review boards, and other assessment/evaluation groups that determine individualized program needs and activities for these students.

This state-of-the-art analysis dealing with training of personnel involved in physical education and/or recreation programs for individuals with handicapping conditions included pertinent factors, forces, and events influencing what's going on in the field. This analysis provides some support for the following recommendations concerning future professional preparation programs:

1. Training should be provided for teachers to work with participants of all ages with special emphasis on infancy, early childhood, and adult levels.

2. Recognition should be made that physical education is an integral part of total school program experiences for all children with handicapping conditions regardless of type or severity of these conditions. Training programs should prepare personnel who function as part of an interdisciplinary team with members such as physical education teachers, recreation leaders, special education teachers, school nurses, occupational, speech, and physical therapists, psychologists, physicians, and other related personnel.

3. Appropriate training programs should be developed at paraprofessional, undergraduate and graduate levels:

- More programs should be developed to provide basic skills, knowledges and competencies for paraprofessionals who will assist physical education teachers and/or recreation leaders in programing.

- Training should be provided to all recreation and physical education majors at the undergraduate level so that they are better able to program for all participants, including persons with handicapping conditions in segregated, integrated and/or combined situations.

- Graduate programs should prepare adapted physical education, corrective therapy, therapeutic recreation, developmental physical education, and remedial physical education specialists who have advanced skills, knowledges, and competencies for programing for all types of handicapping conditions. Training should be provided which is in addition to the strong generalist foundation offered at the undergraduate level. Competencies should be based upon such professional roles and functions as teacher/leader specialists/resources, administrators/supervisors/coordinators, college/university professors, researchers, consultants.

  Guidelines for graduate professional preparation programs in adapted physical education and therapeutic recreation are presented in a publication Guidelines for Professional Preparation Programs for Personnel Involved in Physical Education and Recreation for the Handicapped[8] to assist in initiating, developing, expanding or evaluating these programs. Major professional job roles are discussed in terms of functions or responsibilities and competencies needed to perform each function. Learning experiences to develop these skills, knowledges, understandings and appreciations are suggested. Although emphasis of these guidelines is on graduate preparation, many principles upon which they were based and content of the document itself can be applied to undergraduate and paraprofessional levels of training.

4. Training approaches effective in previous ongoing workshops, seminars, symposia, orientation sessions, inservice training institutes, conferences, and professional preparation programs should be reviewed so that desirable features might be incorporated into new or existing pre and inservice training systems; it is imperative that personnel be kept up to date relative to their job responsibilities.

5. High priority should be given to coordinated, comprehensive state-wide plans for delivery of special education, physical education, and recreation services involving institutions of higher education, state education agencies, and local education agencies.

6. Effort should be made to break away from traditional, structured approaches in professional preparation. Consideration should be given to competency based curricular models; greater emphasis on field work, internship, practicum, and other practical experiences; and use of diagnostic-prescriptive techniques applied in noncategorical approaches. Alternative ways should be developed to obtain competencies besides pursuing formal classwork and inflexible courses of study--i.e., utilization of deficiency/proficiency, entry/exit systems, and community-based training programs.

7. States should make provisions for providing physical education for all students, regardless of type or severity of handicapping conditions, in addition to requiring an adequate and relevant professional preparation for teacher certification so that both physical education and special education teachers are prepared to provide these educational experiences. In addition, college/universities should provide professional preparation programs for therapeutic recreation personnel that leads to eligibility for voluntary registration with The National Therapeutic Recreation Society.

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APPENDIX A

PRELIMINARY LISTING OF COLLEGES/UNIVERSITIES WHICH OFFER ADAPTED PHYSICAL EDUCATION AND/OR THERAPEUTIC RECREATION PROFESSIONAL PREPARATION PROGRAMS

In September 1973, approximately 2,500 colleges/universities listed in Blue Book of College Athletics,[1] Directory of Professional Preparation Programs in Recreation, Parks and Related Areas,[2] and National Directory of Special Education Preparation Programs [3] were sent a Professional Preparation form (Figure 2) with accompanying memo (Figure 1) to obtain information about professional preparation programs dealing with physical education and/or recreation for impaired, disabled, and handicapped individuals. Forms were sent to heads of departments/divisions of physical education, recreation, and special education and to selected college/university personnel in adapted physical education, therapeutic recreation and special education. In addition forms and memos were included with regular outgoing IRUC mail and packets; no tabulations were kept of these contacts. Due to budgetary limitations no stamped, self-addressed return envelopes were included with packets and no follow-up letters were sent to contacts not initially responding. A total of 184 forms were returned. Fourteen indicated no program or courses of any kind; 121 listed courses only, and 49 listed programs in adapted physical education, therapeutic recreation, and/or related areas. Information was also obtained from printed matter and brochures in IRUC files and from personal knowledge of IRUC staff members.

This listing is considered preliminary since response to the survey was relatively small. Future followup is indicated since requests for this type of information are increasing. A semantic problem existed regarding terms such as adapted physical education, therapeutic recreation, developmental or remedial physical education, recreation for special populations, recreation for ill and handicapped persons, special physical education, and physical education and/or recreation for the handicapped. Further complicating tabulations were different uses of terms such as major, minor, option, concentration, emphasis and specialization. For these reasons these terms are identified and defined in this listing. Only institutions of higher education that provide major and/or minor Pre-Bachelor, Bachelor, Master, or Doctoral level programs in 1) adapted physical education, 2) therapeutic recreation, and/or 3) combined adapted physical education and therapeutic recreation are listed. Schools that only offer courses in related areas are not included. Some schools not listed indicated that they did not provide programs in these areas; however some of these schools have flexible courses of study in which individualized programs utilizing existing courses or relevant experiences may offer adequate and appropriate preparation for students.

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LISTING

CODE

Ma = major, specialization, concentration, emphasis, certificate
Mi = minor, option
** = combination Program in Adapted Physical Education and Therapeutic Recreation*

	Adapted Physical Education				Therapeutic Recreation			
	P	B	M	D	P	B	M	D
ARIZONA								
* Arizona State University Tempe 85281			Ma				Ma	
CALIFORNIA								
California State University, Stanislaus Tulare 95380		Ma						
California State University Long Beach 90140			Ma			Ma		
California State University Northridge, 91324							Ma	
California State University San Jose 95192							Ma	
San Diego State University San Diego 92115		Ma	Ma					
San Francisco State University San Francisco 94132							Ma	
University of California Berkeley 94720			Ma	Ma				
University of California Los Angeles 90024			Ma					
COLORADO								
University of Colorado Boulder 80302		Mi				Mi		
University of Northern Colorado Greeley 80631			Ma	Mi		Ma	Ma	Mi
CONNECTICUT								
Arnold College, U. of Bridgeport, Bridgeport 06602		Ma						
* Southern Connecticut State College New Haven 06515			Ma				Ma	
DISTRICT OF COLUMBIA								
George Washington University Washington, D.C. 20006			Ma				Ma	

	Adapted Physical Education				Therapeutic Recreation			
	P	B	M	D	P	B	M	D
FLORIDA								
Florida A&M University Tallahassee 32307						Ma		
Florida State University Tallahassee 32306						Ma	Ma	
University of South Florida Tampa 33620		Mi	Ma					
GEORGIA								
University of Georgia Athens 30601			Ma				Ma	
HAWAII								
* University of Hawaii Honolulu 96822			Ma				Ma	
ILLINOIS								
Illinois State University Normal 61761		Ma	Ma					
Southern Illinois University Carbondale 62901		Ma				Ma		
University of Illinois Champaign-Urbana 61820							Ma	
INDIANA								
Indiana State University Terre Haute 47809		Ma	Ma			Ma	Ma	
Indiana University Bloomington 47401		Ma	Ma	Ma				
IOWA								
St. Ambrose College Davenport 52803		Ma						
University of Iowa Iowa City 52242						Ma	Ma	Ma
KANSAS								
Kansas State Teachers College Emporia 66801						Ma		
University of Kansas Lawrence 66044			Ma	Mi				

	Adapted Physical Education				Therapeutic Recreation			
	P	B	M	D	P	B	M	D
KENTUCKY								
Murray State University Murray 42071	Mi							
University of Kentucky Lexington 40506							Ma	
University of Louisville Louisville 40208			Ma					
LOUISIANA								
Southern University Baton Rouge 70813						Ma	Ma	
MARYLAND								
Catonsville Community College Catonsville 21228	Ma							
Community College of Baltimore Baltimore 21215					Ma			
University of Maryland College Park 20742			Ma	Ma		Mi	Ma	
MASSACHUSETTS								
Greenfield Community College Greenfield 01301					Ma			
University of Massachusetts Amherst 01002						Ma		
MICHIGAN								
Central Michigan University Mt. Pleasant 48858							Ma	
Michigan State University East Lansing 48823		Ma	Ma	Ma		Mi	Ma	Ma
* University of Michigan Ann Arbor 48104			Ma				Ma	
MINNESOTA								
Moorhead State College Moorhead 56560		Mi						
University of Minnesota Minneapolis 55455		Ma	Ma	Ma			Ma	Ma
MISSOURI								
University of Missouri Columbia 65201	Mi	Mi	Ma	Ma			Ma	

	Adapted Physical Education				Therapeutic Recreation			
	P	B	M	D	P	B	M	D
NEBRASKA								
Nebraska Wesleyan University Lincoln 68508		Mi				Mi		
NEW JERSEY								
Glassboro State College Glassboro 08028	Mi							
Newark State College Newark 07083			Ma					
Trenton State College Trenton 08625		Mi	Mi					
NEW YORK								
Canisius College Buffalo 14208	Mi	Mi						
Long Island University, Brooklyn Center, Brooklyn 11201			Ma					
New York University New York City 10003		Ma	Ma	Ma	Ma		Ma	Ma
Queens College Flushing 11367		Ma						
State University College Brockport 14420			Ma					
State University College Cortland 13045		Mi	Ma			Mi	Ma	
NORTH CAROLINA								
Appalachian State University Boone 28607			Ma					
North Carolina Central University Durham 27707			Ma					
University of North Carolina Chapel Hill 27514							Ma	
University of North Carolina Greensboro 27412		Ma						
NORTH DAKOTA								
University of North Dakota Grand Forks 58201						Mi		
OHIO								
College of Mount St. Joseph Mount St. Joseph 45051		Mi						
Kent State University Kent 44242		Mi				Mi		

	Adapted Physical Education				Therapeutic Recreation			
	P	B	M	D	P	B	M	D
OHIO (continued)								
Ohio State University Columbus 43210			Ma	Ma				
University of Toledo Toledo 43606		Ma	Ma					
OKLAHOMA								
Oklahoma Baptist University Shawnee 74801		Ma						
Oklahoma State University Stillwater 74074		Ma						
St. Gregory's College Shawnee 74801					Ma			
University of Oklahoma Norman 73069		Ma				Ma		
OREGON								
Lewis & Clark College Portland 97219		Ma	Mi					
University of Oregon Eugene 97403		Ma	Ma	Ma		Ma	Ma	Ma
PENNSYLVANIA								
California State College Pennsylvania 15419			Ma					
Pennsylvania State University University Park 16802			Ma				Ma	
Slippery Rock State College Slippery Rock 16057			Ma					
Temple University Philadelphia 19122							Ma	
University of Pittsburgh Pittsburgh 15213	Mi	Ma				Ma		
West Chester State College West Chester 19380		Mi						
TENNESSEE								
Covenant College Lookout Mountain 37350		Mi						
* George Peabody College for Teachers Nashville 37203			Ma				Ma	

	Adapted Physical Education				Therapeutic Recreation			
	P	B	M	D	P	B	M	D
TEXAS								
Rice University Houston 77001		Mi						
Texas A&M University College Station 77843	Mi	Ma	Mi	Mi				
Texas Woman's University Denton 76204			Ma	Ma			Ma	Ma
University of Texas Austin 78712			Ma	Ma				
University of Texas - Permian Basin Odessa 79760		Ma	Ma					
UTAH								
Brigham Young University Provo 84602			Ma				Ma	
* University of Utah Salt Lake City 84112			Ma	Ma			Ma	Ma
WISCONSIN								
University of Wisconsin La Crosse 54601		Ma	Ma			Ma		

FIGURE I

American Association for Health, Physical Education, and Recreation
A NATIONAL AFFILIATE OF THE NATIONAL EDUCATION ASSOCIATION • 1201 16TH STREET NW, WASHINGTON, D.C. 20036
WILLIS J. BAUGHMAN, President • CARL A. TROESTER, JR., Executive Secretary • TELEPHONE 833-4000

DO YOU HAVE THIS INFORMATION?

TO: 1. Heads, College/University Departments/Divisions of Physical Education, Recreation, and Special Education

2. Selected College/University Personnel in Adapted Physical Education, Therapeutic Recreation, and Special Education

FROM: Julian U. Stein, Director
Information and Research Utilization Center in Physical Education and Recreation for the Handicapped (IRUC)

SUBJECT: Search for Research and Professional Preparation Information

The Information and Research Utilization Center in Physical Education and Recreation for the Handicapped (IRUC), a project of American Association for Health, Physical Education and Recreation, has been established to collect, review, interpret, and distribute information concerning physical education and recreation for those with handicapping conditions.

One objective of IRUC is to coordinate the reporting of research in this field since results of many studies such as master's theses, doctoral dissertations, and research seminar/projects are not in general circulation. Accordingly, would you please assist IRUC by completing the Research Information Forms as indicated below:

. Information about any completed faculty research, master's thesis, specialist's project, doctoral dissertation, or undergraduate/graduate research seminar/project dealing with any aspect of physical education, recreation, camping, outdoor education, sports/athletics, perceptual motor activities, dance, health, safety, or related areas involving subjects with any type of handicapping condition.

. Information about similar studies, projects, and activities to be undertaken in the future.

Would you and/or your staff please complete the enclosed Research Information Forms and return them as soon as possible? If more forms are needed, please xerox one of the forms enclosed or request additional copies.

Another objective of IRUC is to obtain comprehensive data on professional preparation programs related to physical education and recreation for those with handicapping conditions. Therefore would you please send us the following:

. Information entered on the Professional Preparation Form about your institution.

. Appropriate materials such as announcements, brochures, bulletins, catalogues, and courses of study.

Thank you very much for your assistance and efforts in behalf of countless individuals with handicapping conditions.

Enclosures: Research Information Forms
IRUC brochure
Basic questionnaire Form and Flier
Professional Preparation Form

P.S. Please complete the Basic Questionnaire form to provide guidance to the IRUC staff in establishing priorities in terms of interests, needs, problems, and issues.

FIGURE 2

PROFESSIONAL PREPARATION FORM

Name of College/University:

Address:

Person completing form:

Suggestions for other persons to be contacted at your school:

Please check below any type of major or minor (including concentration or option) which your school offers:

	Pre-Bachelor		Bachelor		Master		Doctoral	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Adapted Physical Education								
Therapeutic Recreation								
Corrective Therapy								
Camping for Handicapped								
Outdoor Education/Handicapped								
Perceptual-Motor Development								
Dance Therapy								
Other (Specify):								
Other (Specify):								

If no type of major or minor is offered as indicated above, please list names of individual course or types of seminars offered in the areas of concern:

COURSES	SUMMER WORKSHOPS	SEMINARS	INSTITUTES	OTHER

Enclose available brochures or printed materials concerning any of the above degree plans or courses.

Please return to: IRUC, c/o AAHPER, 1201-16th Street, N.W., Washington, D.C. 20036

INTEGRATING PERSONS WITH HANDICAPPING CONDITIONS INTO REGULAR PHYSICAL EDUCATION AND RECREATION PROGRAMS *

State of the Art

Recently, there has been a well established trend to mainstream or integrate special education class children and youth into regular or normal classroom situations. Usual procedure followed in public schools for this regular class placement is to take students from a special class setting and enroll them in a class situation designed for non-handicapped students. Many variations of this procedure occur and have been reported extensively in related literature.

Individuals with various physical, mental, emotional, social, or educational impairments, disabilities, or handicaps are said to be more like their peers and contemporaries than they are different so that discriminate integration is encouraged and activities provided to promote getting and keeping these populations in the mainstream of society. However, many separate and segregated programs and facilities continue to emphasize differences, deficiencies, disabilities, and deviations. There is need to plan and promote flexible procedures whereby individuals participate in separate programs and activities as needed, and in integrated ones when possible. Possible reasons for lack of support for classroom mainstreaming include reticence on the part of special education personnel who might lose their jobs and potential loss of federal and/or state administered categorical grants for programing. Other problems that might affect support for mainstreaming are different pupil-teacher ratios, reduced services, teacher certification, and decreased salaries.

Available literature covered a wide variety of topics in the controversial subject area of integrating special education students into regular classroom situations including:

1) issue of segregation versus integration;
2) integration models for students who are mentally retarded, physically impaired, hearing impaired, visually impaired, learning disabled, emotionally disturbed, neurologically impaired, socially/culturally deprived, cardiac, gifted, dyslexic, and have language disorders;
3) attitudes and motivation of students with various handicapping conditions;
4) reactions of students with various handicapping conditions to peer group pressures, social stigma influences, and resultant psychological damage;
5) personal and social adjustment of these students;
6) classroom behavior of special students;
7) social, emotional, mental and physical development of impaired and disabled students;

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*A guide, Integrating Persons with Handicapping Conditions Into Regular Physical Education and Recreation Programs, gives a detailed analysis of selected research and program literature concerned with the integration of individuals with handicapping conditions into physical education, recreation, and related programs. Includes selected references and audiovisual aids. Available from AAHPER Publications Sales (1201 16th Street, N.W., Washington, D. C. 20036), 1975

8) peer group attitudes and acceptance of special students;
9) attitudes and involvement of teachers and related school personnel;
10) inservice and preservice training models for classroom teachers;
11) classroom teacher methodology, teaching skills, behavior modification techniques, and use of equipment; and
12) family attitudes, involvement and relationships to these special students.

Other factors decreasing separate or segregated services provided to individuals of all ages with handicapping conditions are normalization and deinstitutionalization procedures. Normalization legislation in the Scandinavian countries in the 1960's has resulted in movement of mentally retarded individuals from residential situations to hostels, group and foster homes, special community programs, and apartments. Normalization principles stress making available to mentally retarded persons, patterns, and conditions of everyday life which are as close as possible to the norms and patterns of mainstream of society. Life routines such as eating breakfast, going to school and work--sheltered workshop or day care center, returning home, going on recreational outings, and participating in community and social activities are part of normalization procedures. In addition, deinstitutionalization procedures in many states are causing large numbers of severely and profoundly mentally retarded residents in state hospitals and schools to move into community living facilities. These impaired, disabled, and handicapped individuals who are placed in the community are being integrated into community recreation programs.

Teachers and recreation leaders responsible for regular physical education and community recreation programs are urgently requesting assistance as individuals with all degrees and types of handicapping conditions are integrated and mainstreamed through normalization approaches. In addition to activities, methods, approaches, and techniques for implementation in regular programs, clarification of intent of legislation and litigation mandating zero-reject principles as they apply to physical education and recreation, and related areas is needed.

Analyses of selected research and program literature concerned with integrating individuals with handicapping conditions into ongoing physical education, recreation, camping and related program areas revealed:

1. *Integration of students with various handicapping conditions into regular public physical education, athletic, and intramural programs is feasible and desirable in certain instances if such programing is approached with positive attitudes and understandings on the part of related personnel and appropriate, flexible program planning and activity modifications are made when necessary. However, social adjustment may be better achieved in separate rather than in integrated physical education classes.*

In view of current and impending state legislation for mandatory physical education for all students, regardless of handicapping condition, mainstreaming approaches and/or a flexible combination of integrated and segregated situations will probably increase in the near future. Therefore, there is a great need for additional research and program literature on this topic to assist all related personnel for provision of programs.

2. *There is a demand for assistance and information concerning integrating or mainstreaming impaired, disabled, and handicapped individuals of all ages into community recreation programs. Available research data and program literature is inadequate in relation to current and projected future needs due to such factors as state legislation, litigation, consumer advocacy, deinstitutionalization policies, and normalization procedures.*

Due to current trends for mainstreaming/integrating individuals with handicapping conditions into community recreation programs in addition to deinstitutionalization procedures being employed in many states that result in additional handicapped consumers for community recreation programs, there is need for more in depth research and program information to aid related personnel in programing. Areas of investigation that should be considered include:

- effects of integrated programing upon the social, emotional, mental, and physical development of the individual;
- basic physical and recreation skills related to successful program integration;
- standards or guidelines for organization and administration of physical education and recreation programs with appropriate interagency involvement;
- state and national analyses of future needs regarding mainstreaming handicapped individuals from institutions, state hospitals/clinics, halfway houses, special programs, and day care facilities into community recreation programs;
- inservice training for physical education and recreation personnel;
- development of flexible physical education and recreation models for full integration, partial integration, and combinations of separate and combined approaches;
- consumer advocacy models; and
- activity modification approaches in physical education and recreation programs.

3. *There is a current trend toward integrating campers with various handicapping conditions into ongoing camp situations originally designed for non-handicapped children and youth. Efforts to date are generally considered successful in terms of enjoyment, peer group acceptance and attitudes, enhanced social interaction among groups and individuals, awareness and understanding of handicapped conditions by non-handicapped campers, and increased experiences in physical and natural activities.*

Since efforts to date generally have been successful and since organization and administration models have been developed for a variety of mainstreaming approaches, there is an apparent need to continue this programing in the future. Specific priorities that should be considered for investigation are:

- further development and revision of integration models;
- guidelines, standards, and evaluative criteria for integration models that are based upon interagency and family cooperation;

- inservice training for camp personnel; and
- in depth determination of contributions of the integrated camping situation upon the total development of the camper with a handicapping condition.

4. *Much emphasis concerning visually impaired persons is given in the literature on integrating individuals with handicapping conditions into existing physical education and recreation programs. Basic information is available to the practitioner for such programing; indications are that with appropriate adaptations, blind and partially sighted persons can participate actively and successfully with sighted individuals.*

Some information is already available relative to integrating visually impaired persons into physical education and recreation programs; however, additional program literature and research data are needed. Statements made in this analysis concerning future needs in integrated camping, physical education, and recreation situations are applicable for needs of the visually impaired.

5. *Curriculum or model program descriptions for integrating impaired, disabled, and handicapped children into regular classroom situations occasionally will include physical education and/or recreation activities as a part of the total educational program. Emphasis given to physical and/or recreation activities varies greatly.*

Although some sporadic efforts have been made, there have been relatively little interest and recognition given in the literature on integrated class/model program descriptions for physical education and/or recreation for the students involved. Since physical education and recreation are a vital part of the total educational process for students with handicapping conditions due to social, emotional, mental, and physical contributions of these activities, this knowledge needs to be imparted to special education personnel. Hopefully, this realization will result in appropriate inclusion of physical education and leisure time skills in future literature on integrated educational models.

6. *Little information is known about attitudes on the part of the participant, his peers, and related program personnel in integrated physical education and recreation programs. However, there are some indications that integrated situations may produce desirable participant attitudes and that positive program personnel attitudes will promote participation in more vigorous physical activities by the impaired, disabled, or handicapped student.*

Since little information is available on the subject, additional study is needed on attitudes in integrated physical education and recreation situations with comparison of findings to data in the literature for attitudes in the integrated classroom setting. A logical implication that should be investigated is extension of Buell's statement concerning visually impaired persons in that improper attitudes and lack of knowledge about physical activities for impaired, disabled, and handicapped students affects amount of vigorous physical education activities provided in many public schools.

RECOMMENDATIONS

The following suggestions are made to aid personnel in need of direction and assistance due to integration of individuals with handicapping conditions into physical education, recreation, camping, and other related program areas:

- Fulfill needs stated in this analysis of literature.
- Apply existing program information and research findings for integrated situations in addition to information available for regular, non-integrated and special, segregated physical education and recreation programs. This literature includes information on methodology, program development, financial assistance, equipment, resources, evaluation, and activity modifications.
- Develop and implement pre and inservice training models for physical education and recreation personnel who will be or are involved in integrated programs.
- Stress a noncategorical approach in accordance with individual social-emotional, mental, and physical functional levels.
- Plan future programs allowing for the possibility of increased numbers of impaired, disabled, and handicapped participants but with the perspective that extreme inflexible mainstreaming situations may change to more moderate and adaptable approaches.
- Provide flexible programs with integrated, segregated, or partially integrated combinations in addition to other approaches such as use of resource rooms or teachers, program aides, peer tutors, specialized consultants, or special coordinators. An example of this type of programing in the public schools might be special, separate skill development sessions when necessary for a student in an integrated physical education class, provision of services from resource personnel, and assistance from aides for developing such skills as dressing quickly, recording scores and opening padlocks on lockers.

PRIORITY NEEDS

Research and Demonstration

High Level

- Identify and validate mainstreaming models which integrate impaired, disabled, and handicapped individuals into regular physical education, recreation, camping and related programs. Compare effectiveness of mainstreaming models with special/segregated models in social, emotional, mental, and physical development of individuals.

Consider the following:

1) Enhancement of social and personal adjustment of persons integrated into program.
2) Consider effects on attitudes of participants integrated into program, peers, and related program personnel
3) Develop successful techniques and methodology for activity participation.
4) Identify basic requisite skills needed for successful integration into ongoing programs.
5) Identify effective physical education and recreation models employing full integration, partial integration, and combinations of separate and combined approaches.
6) Disseminate information obtained on mainstreaming models.

Mid Level

- Identify and validate successful integrated education/training models which include physical or recreational activities and determine contributions of these activities as part of the total educational program.

- Identify criteria/conditions/personal traits of participants/leaders/peers in successful models to make mainstreaming more likely to succeed.

- Survey state and national status of integrated programing and project future needs as a result of current and anticipated legislation and litigation.

- Determine standards or guidelines for organization and administration of integrated models in physical education, recreation, and related areas.

Personnel Preparation

High Level

- Provide preservice and inservice training systems for paraprofessionals and aides who will assist the physical education teacher or recreation leader.

- Provide undergraduate programs for all recreation and physical education majors so that they are better able to program for all participants, including persons with handicapping conditions.

- Provide inservice training systems such as workshops, seminars, symposia, orientation sessions and conferences so that all related personnel are better able to program for participants integrated into ongoing programs.

  Consider the following areas:

  1) Use of diagnostic-prescriptive and activity analysis techniques to establish programs for participants.

  2) Emphasis on non-categorical approaches in programing.

3) Apply body of knowledge gained from mainstreaming and special program efforts in addition to research investigation (methodology, program development and implementation, financial assistance, equipment, resources, evaluation, and activity modifications).

4) Disseminate resource information and references on mainstreaming models.

5) Use of advocates for impaired, disabled and handicapped persons and the participants themselves in obtaining and implementing programs.

Plan and implement differential staffing patterns in school physical education, community recreation, and related programs to show efficacy, effectiveness, and efficiency of staff models that include master teachers/leaders, resource and activity specialists, support personnel, regular teachers/leaders, paraprofessionals, and volunteers for integrating impaired, disabled, and handicapped persons into these regular programs.

CRITICAL ANALYSIS: RESEARCH INFORMATION ON PERCEPTUAL-MOTOR/PSYCHOMOTOR FUNCTION FOR CHILDREN AND YOUTH WITH LEARNING DISABILITIES

Walter E. Cooper
University of Southern Mississippi, Hattiesburg

INTRODUCTION

State of the Art

A radical change in direction of education for exceptional children began when Kephart (1960), a psychologist-special educator, published the Slow Learner in the Classroom and raised the still controversial question - does poor functioning in certain specified motorically related areas relate to poor functioning academically?

Along with the rapid surge in development in the special education area, Kephart's hypotheses and subsequent program developments generated an era of multidisciplinary concern in the perceptual-motor/psychomotor area. A special educator raised the questions of which special educators, medical doctors, child development specialists, and, probably most important, physical educators were to become intrigued.

Although a great amount of interest was generated by Kephart's work and the Doman-Delacato, Cratty, Bowers, Barsch, Getman, Frostig, etc., programs began to emerge, no systematic assessment of the movement was embarked upon until AAHPER organized the Perceptual-Motor Task Force in 1967. This development was to bring together interdisciplinary authorities to explore major issues, develop national and regional conferences on Perceptual-Motor functioning, encourage state conferences through liaison representatives, and a number of publications. The impetus of the Task Force efforts has since carried over into numerous workshops, conferences, funded projects, publications, and even college curricula.

The following quotations would appear to question-adequately the current state of affairs in the perceptual-motor/psychomotor area. Seefeldt (1972) wrote,

> "In one sense we are gathered here to assess a situation and determine what can be retrieved from an educational movement which overtook us before we were ready for it (p. 1)."

Carlson (1972) calls for model testing,

> "Much of the confusion which now exists is attributed to the lack of systematic testing of the various systems under real world conditions. It is even more discouraging to

> realize that educators are willing to initiate new programs, and continue those which are established, without any scientific evidence that these programs are accomplishing their objectives (p. 4)."

Seefeldt (1972) further stated,

> "The paradox we face is there is abundant testimony regarding the effectiveness of perceptual-motor programs in the enhancement of academic achievement but little research evidence to support such a claim (p. 5)."

Major (Task) Objective of Paper

The objective of this paper was to develop a critical analysis of research and related materials as it applies to perceptual-motor/psychomotor/function/development of children with physical/mental/emotional handicapping conditions.

It should be pointed out from the onset that much of the theory and research presently utilized in program development applies to both normal and exceptional children alike when a developmental approach is accepted.

Gesell (1941), in discussing the importance of developmental diagnosis at the Yale Clinic of Child Development, wrote:

> ...Through fortunate circumstances this clinical service has always been conducted in close correlation with a systematic study of normal child development. One interest has reinforced the other. Observations of normal behavior threw light on mal-development, and deviations of development in turn helped to normal infancy. We have come to sense the identity of the developmental processes which in equal measure determine the reaction patterns of the intact and the defective child, the well endowed, the partially endowed, and those blemished by injury and disease. (Knoblock and Pasamarick, 1974, p. xiii).

The work of Gesell and Amatruda serves as the basis for the field of developmental pediatrics--a form of clinical medicine which is systematically concerned with the diagnosis and supervision of child development.

This paper should be considered merely a starting point, an overview at best, and not an end in itself. Hopefully, it will give a worthy base for those interested in pursuing the perceptual-motor/psychomotor area in greater depth.

Definitions

In constructing a position paper on any subject, it is first imperative to stipulate definitions of key terms. The terms perceptual-motor/psychomotor appear to be used synonymously in much of the literature. The definitions which follow have been stipulated to clarify these terms:

Psychomotor - Krathwohl (1964) has defined psychomotor objectives as those which "emphasize some muscular or motor skill, some manipulation of material or objects, or some act that requires a neuromuscular co-ordination (p. 7)."

Harrow (1972) wrote, "...When the term is separated into its two component parts, psycho and motor, it connotes mind-movement or voluntary motion. Therefore, as an operational definition, the term psychomotor should communicate to the reader that all observable voluntary human motion will fall into the domain (p. 31)."

Perceptual-Motor - "The term 'perceptual-motor' involves a sequence of events which requires a motor response, but are primarily designed to improve the functional capacity of the visual, auditory, proprioceptive, or tactual modes of perception (Seefeldt (1972) p. 3)."

Only slight differences appear between the two terms 'perceptual-motor' and 'psychomotor'. 'Psychomotor' appears to be a more comprehensive term referring to the domain of observable movements, whereas 'perceptual-motor' might be considered a class within this domain.

Many groups have become involved in the concern over perceptual-motor functioning. From this, elementary school physical education and therapeutic recreation have emerged as disciplines within themselves; occupational therapy has become a field of study within special education. Also numerous optometrists have become concerned about the difference between visual acuity and visual understanding. The development of movement education, within elementary physical education, has also certainly enhanced the interest in psychomotor development among children.

The classical concern over the WHOLE PERSON (mind, spirit, body) has certainly been renewed but in a scientific framework. With the development of the Taxonomies of Educational Objectives in the Cognitive and Affective Domains (1956, 1964), Bloom and Krathwohl established models for the careful study of these two domains and Harrow (1973), Simpson (1966-67), and several others have developed models in the psychomotor domain. Thus the framework appears to exist for the careful study of each domain separately but this is also one of the major errors or weaknesses. Much of the current research at least suggests interactions among the three domains which should be recognized.

Theoretically Havinghurst (1972) in his classic study of developmental tasks lists a major task of middle childhood that of 'learning physical skills necessary for ordinary games (p. 19).' This task is necessary primarily to aid in peer acceptance or socialization which is an affective task necessary to positive self-concept formation.

There are a number of related areas of research and concern to perceptual-motor/psychomotor development and functioning. Among these, as so aptly pointed out by the AAHPER Perceptual-Motor Task Force (1973), are:

Auditory Perception and Movement
Body Image and Movement
Depth and Distance Perception and Movement
Feedback and Regulation of Movement Behavior
Figure-Ground Perception/Field Dependence/Field Independence
Reduced and Supplementary Perceptual Cues and Movement
Visual and Size Perception and Movement

Factual Base

The necessary starting point for the systematic development and study of any discipline is a common factual base. Though interpretation of some of the facts may be different, as it is even in the pure scientific areas, at least the common body of facts will be being tested. In cross referencing much of the work currently available, it is evident that this common base has been identified and is generally being utilized. This is a valuable assessment mechanism for the validity of programing. One only has to glance at most of the perceptual-motor programs in existence and the names of Kephart, Cratty, Bowers, Barsch, etc., are evident in the references. A glance at Table 1 indicates much more commonality among programs than specificity.

Several assumptions underlie the factual base in existence for decision-making relative to the perceptual-motor/psychomotor areas of functioning for children:

A. Basic knowledge of motor development as a continual process with an identifiable rate and sequence is relatively strong and has been thoroughly substantiated.

B. Philosophical models both judgemental and based upon factor analytic studies are available as a factual basis for program development.

C. Current 'quasi' or applied research and evaluative efforts, when based upon substantiated theory and research, offer valuable means of field-testing models.

D. Multivariate statistical techniques, e.g., canonical correlation, discriminant function, MANOVA, etc., which are becoming more frequently utilized, will provide answers for many of the current problem areas hypothesized.

A. Theoretical Base for Motor Development

Theory, of course, refers to the knowledge which has accumulated or been synthesized from previous research. The early base of knowledge has depended heavily upon the studies of Shirley (1931), Bayley (1935, 1936), Gesell (1933, 1946, 1954), and McGraw (1935, 1946).

Kephart's (1960) Slow Learner in the Classroom must be hailed as the impetus for what became a new movement in the education of exceptional children. His work also raised important questions in general about the contribution of development in the psychomotor domain.

Current works which have substantiated much of the early base have been conducted by:

1. Espenschade and Eckert in Motor Development (1967)
2. Cratty - Perceptual and Motor Development in Infants and Children (1970)
3. Folio and Dubose - The Peabody Developmental Motor Scales (1974)
4. Frankenburg and Dobbs. The Denver Developmental Screening Test (1970)
5. Cooper and Heinze. The USM-ESS Motor Development Checklist (revised, 1974)

Sinclair (1971) provided excellent documentation of what to expect among preschool children relative to the quality of performance on twenty-five selected motor tasks.

Francis and Rarick (1960) and Rarick, et. al., (1970) have presented valuable documentation of the status of functioning among mentally retarded children on standard physical fitness tests. His work suggests that mentally retarded subjects function two to four years below normals but whether this is due to the mental handicap or lack of activity is questionable.

There is rather general agreement among disciplines that almost everything the child learns from birth to five or six years of age is a result of active involvement (psychomotor behaviors) in his environment. First, there is the development of self-help or 'essential' skills of locomotion, feeding, and dressing, then the refinement of basic 'fundamental' motor behaviors, e.g., running, jumping, throwing, catching, striking, kicking, etc., and finally the beginnings of 'functional' perceptual-motor or readiness concepts for academic learning - laterality, directionality, spatial awareness, etc.

TABLE 1 -- AREAS OF CONCERN IN PERCEPTUAL-MOTOR DEVELOPMENT

Bryant J. Cratty (1967)	Getman, Kane Halgren and McKee Clayton, Missouri	Dayton, Ohio, Program (3, 4 and 5 year old children)	Newell C. Kephart The Perceptual Motor Survey (1966)	Louis Bowers, Motor Developmental Activities for the Mentally Retarded (1968)
Program	Program	Program	Program	Program
1. Body Image	1. Body Image	1. Body Image, Space and Direction Awareness	1. Walking board (balance)	1. Exploratory movement activities
2. Balance	2. General Coordination	2. Balance	2. Jumping	2. Non-locomotor movements
3. Locomotion	3. Balance	3. Basic body movements	3. Identification of body parts	3. Locomotor movements
4. Agility	4. Eye-hand Coordination	4. Symmetrical activities	4. Imitation of movements	4. Balance activities
5. Fitness	5. Eye Movements	5. Eye-hand and Eye-foot coordination	5. Obstacle course	5. Airborne activities
6. Catching and throwing balls	6. Form recognition	6. Large muscle activities	6. Kraus-Weber Test	6. Hand-eye-foot manipulative activities
7. Manual abilities	7. Visual memory	7. Fine muscle activities	7. Angels in the Snow	7. Movements of arms and legs
		8. Form perception	8. Chalkboard	8. Catching, throwing, and bouncing
		9. Rhythm	9. Rhythmic Writing	
		(This above program was developed with help from Dr. Newell C. Kephart)	10. Ocular pursuits	
			11. Visual Achievement Forms	

Piaget (1952) in describing the earliest stages of development indicated no exact time period can be assigned to these stages, but the sensory motor stage covers approximately the period from birth when the child is capable of only reflex activity, to the age of two years, when he is capable of thought.

Barritt (1972), who recently studied under Piaget, describes the early development of the human organism as follows:

> "The human being that Piaget describes is consistent from birth through adulthood in his desire to understand, to make sense out of the things he sees, and hears, and feels ... The very young child before two years of age is guided by his physical equipment in these efforts. He is the sensory-motor searcher who sucks, grasps, looks, and listens. He knows through his action. He must act to know (p. 1)."

Corbin (1973) goes on to say, "Learning is an active process and exploration, play, and motor skills should be of primary concern in the early years. Through these concrete experiences the child develops the concepts necessary for abstract thinking (p. 26)."

Seefeldt (1971) has said, "Lack of a movement repertoire during childhood can have serious ramifications for it is through participation in locomotor skills that much of the social and emotional development of childhood is shaped (p. 21)."

He goes on to call attention to the need for careful attention to whether or not 'adequate' psychomotor skill develops by saying, "It has been determined that the progression from level to level in these patterns depends upon an ample opportunity for practice under guided instruction (p. 21)."

In other words, maturation may not just automatically unfold, planned interventions (whether conscious or unconscious) may be necessary for 'adequate' motor skill to develop!

So, you see, the developmental process entails emerging from a completely dependable organism in his environment, to the human being who develops toward independence in his environment. This development moves through an identifiable sequence and at an identifiable rate. There is ample evidence that if this development does not proceed successfully later learnings may not occur with success (Bloom, 1964).

In this regard Corbin writes, "Research has shown that an environment rich in sensory stimulation has led to positive behavioral changes whereas environments restricted in sensory experiences have resulted in retardation of social, motor, and intellectual development (p. 28)."

The Denver Developmental Screening Test, developed by Frankenburg and Dobbs (1970), is particularly worthy in that the test was constructed utilizing a series of bar graphs which give immediate age level index points at which 25, 50, 75, and 90 percent of the norm group could accomplish specified tasks in the Gross Motor, Language, Fine Motor Adaptive, and Personal Social Areas. The major contribution of the test is the recognition of the variability of individual development.

The Peabody Development Motor Scales (1974) developed by Folio and Dubose and presently being validated offers an additional tool for assessment of early development. It offers a five item scale of quality of performance, a space for comments, and also suggests activities for improvement of weak functioning.

The University of Southern Mississippi - Ellisville State School Motor Development Checklist (1972, 1974 revised) is another practical tool which offers both assessment criteria and related activities for improvement of functioning.

The program developments by Montessori (1964) and widespread implementation of problem solving approaches in the early development of the child should be recognized as making a significant contribution to activity oriented curriculum development.

Also the work of Axline (1971) in play therapy programing for emotionally disturbed children should be recognized and further assessed as a workable model for a grossly neglected specific problem area among children.

Denhoff (1969) in discussing the role adequate motor development plays in perceptual development has written,

> "The motor bases for perceptual development are stated to be posture, directionality and laterality, and the awareness of the body in space. I cannot talk about motor bases without also including definitions of perception and intelligence ... Motor bases, perception and intelligence are three components which are inseparable in our clinical approach to school adjustment (p. 50)."

Gaar (1972) and Haley (1971) have provided valuable data relative to developmental progress in motor skill areas through the middle and late childhood years.

A key principle which should be discussed here is that of 'MOTOR BEHAVIOR AGE'. If improvement in functioning is to be realized and if development is of identifiable sequence and rate, then the MBA must be assessed and then appropriate activities to move the child to the next step in the developmental sequence utilized.

B. Factor Analysis Studies and Philosophical Models

It is vitally important that anyone working with perceptual/psychomotor education of children understand vastness of the entire possible domain of psychomotor abilities. Is the program intent to improve basic locomotor functioning, physical fitness, readiness for academic functioning, self-acceptance, or possibly manipulative or hand-eye dexterity skill for possible vocational-technical competency? (Again the need for team approaches which included those trained in motor areas becomes apparent!)

Factor Analysis Studies

Several factor analysis studies have been conducted which serve as the basis for models for sound program development.

Fleishman (1964) has identified at least ten factors in the area of physical fitness or proficiency and Gagné and Fleishman (1959) have suggested numerous other factors (eleven at least) in the perceptual-motor area specifically related to dexterity and fine motor types of tasks.

Ayres (1965) pointed out a general inconsistency reported in the literature regarding the areas of concern in perceptual-motor functioning and wrote "The lack of consistency among reported results suggests that the degree of association may be dependent upon the nature of the population under study (p. 338)." The perceptual-motor battery of tests included thirty-six selected items which appeared to be more toward the perceptual and fine-motor areas than the gross motor. Ayres reported the postulation of the following five major patterns of perceptual dysfunction.

1. Developmental apraxia
2. Tactual, kinesthetic, and visual perceptual in form and position in space
3. Tactual defensiveness
4. Deficit of integration of the two sides of the body
5. Deficit of visual figure-ground discrimination

It is interesting to note that different factor structures were observed for the dysfunction children as compared to the normal achievers.

Musgrove (1970) using 80 first and second grade children, factor analyzed a battery of 28 tests items developed by Cratty (1966) and Roach and Kephart's (1966) Purdue Perceptual-Motor Survey. She identified the following nine factors:

1. Visual tracking
2. Visual discrimination and copying of forms
3. Visual discrimination and copying of rhythmic patterns
4. Verbal body image
5. Dynamic balance
6. Spatial body perception
7. Postural maintenance
8. Visual discrimination and copying of motor patterns
9. Gross agility

Caution, from a research design standpoint, must be warned in total acceptance of Ayres and Musgrove's work. The number of subjects utilized in these factor analysis studies is far below the minimum acceptable. Therefore, there is need for replication to check the reliability of results.

Rarick (1974) currently has a BEH project, the objective of which is to identify the factor structure of motor abilities for trainable mentally retarded children.

The work of Ismail and Gruber (1967) also offered valuable information relative to interactions among psychomotor and achievement variables. Myers (1960) and Guilford (1958) have conducted additional valuable work on the structure of psychomotor abilities. These studies raised numerous questions and provided impetus for additional studies.

Chissom and Thomas (1971) provided valuable insight into the widely used Frostig Developmental Test of Visual Perception. Utilizing data from eleven previous studies, analysis of nine of these clearly indicated that a single factor described (50 to 60% of the total variation) the five Frostig subtests.

Another test battery of motor development which has aroused wide interest is the Oseretsky Motor Development Scale. The Oseretsky Test was constructed in Binet-like fashion, organized by age levels from 4 to 16 years and included the following six subtests:

1. General static coordination
2. Dynamic manual coordination
3. General dynamic coordination
4. Motor speed
5. Simultaneous voluntary movements
6. Asynkinesia (i.e., lack of precision of movement or surplus movement)

Cassell (1949) and Sloan (1955) developed adaptations of the Oseretsky Test and their work appears to offer valuable insights into motor functioning among exceptional children.

Vandenburg (1964) synthesized research pertaining to the Oseretsky Test and concluded that the nature of factors measured by the Oseretsky Test needs further classification and that "... It seems desirable to correlate this test with some of the measure of factors in motor performance proposed by Seashore, Fleishman and others (p. 38)."

Canonical correlation studies by Chissom and Thomas (1972), V. Henry (1973), Cooper (1973), Kirkendall and Gruber (1970) have identified reasonably high relationships among batteries representing different domains of functioning.

Chissom and Thomas (1972) investigated the relationship existing between a battery of five academic ability variables and a set of three perceptual-motor variables. Significant relationships were observed for the kindergarten (Rc=.61) and first grade groups (Rc=.67) $p<.01$ and for the second grade groups (Rc=.73) $p<.05$. By the third grade the relationship no longer was evidenced as significant thus emphasizing possible need for emphasis and recognition of this developmental relationship of domains at an early age.

One of the most widely used models has been that projected by Kephart (1960) and objectified by Roach and Kephart (1966) in The Purdue Perceptual-Motor Survey. Kephart's work and the extensive work of Cratty (1965, 1969, 1970, 1971, etc.) have served as the basis for many of the perceptual-motor training programs. Cratty through the Perceptual-Motor Laboratory at UCLA has continually developed techniques for assessment and practical program elements through field-based programs.

Additional correlational studies by Singer (1967) and Singer and Brunk (1968), and Ragsdale (1950) have provided valuable input for theoretical model construction.

A major caution should be made relative to the cause and effect fallacy of correlational findings. Correlational findings should serve as a basis for testing experimental causal hypotheses.

Synthesis and Philosophical Models

Valuable contributions toward synthesizing the state of the art relative to perceptual-motor research have been made by Seefeldt (1971, 1972, 1973), Carlson (1972), Stein (1973), Klesius (1973), and Thomas (1974).

Klesius (1973) synthesized the research pertaining to relationships of perceptual-motor functioning and reading achievement and indicated quality criteria. He pointed out about equal evidence pro and con for such a relationship.

Thomas (1974) pointed out the perceptual-motor skills most consistently related to academic abilities involve fine eye-hand coordination, shape recognition, perceptual-motor match and balance skills.

Since the development of the Taxonomy of Educational Objectives in the Cognitive and Affective Domains by Bloom, Krathwohl, et. al., (1956, 1964), several attempts (Harrow (1972), Ragsdale (1950), Simpson (1966-67) have been made to develop taxonomic systems for categorizing areas in the psychomotor domain.

Hunt (1964) projected a model for movement behavior and the National Special Media Institutes, in recognition of the importance of knowledge of psychomotor functioning for media specialists, published a resource book entitled The Psychomotor Domain (1972); also two other volumes on the Cognitive and Affective Domains.

Harrow's (1972) is the most comprehensive of the taxonomy efforts in the psychomotor domain. She suggested the following six major classes:

I. Reflex behaviors
II. Basic-fundamental movements
III. Perceptual abilities
IV. Physical abilities
V. Skilled movements
VI. Non-discursive communication

Cooper (1973) reviewed this taxonomy raised questions about the 'perceptual abilities' class as a major class in the psychomotor domain. The specific intent of the book was to provide "a functional written taxonomy for the psychomotor domain to be utilized for the classification of observable movement behaviors," and this appeared to have been accomplished particularly in regard to a curriculum development model.

Simpson's (1966-67) model for the development of psychomotor skill provided a valuable tool for curriculum development. The major classes of this taxonomy are:

1.0 Perception
2.0 Set
3.0 Guided response
4.0 Mechanism
5.0 Complex overt response and possible
6.0 Adapting and originating

This taxonomy was based on sound learning theory and has much to offer relative to the development of sound teaching-learning methods.

C. Current Applied Research and Evaluation Efforts

Cratty (1971) presented valuable ideas in assessment and program development relative to activity curricula ideas. Wessell (1974) in the I CAN curriculum project has implemented prescriptive teaching-learning techniques with classroom teachers in improving the functioning of mentally retarded children. Vodola (1972) with Project Active has developed a network of adaptive physical education programs for exceptional children in the state of New Jersey. Cooper and Heinze (1974) published a manual of ideas for the multi-handicapped mentally retarded youngster which was field-tested in the Mississippi Special Olympics program.

The AAPHER Special Physical Fitness Test Manual (1968) presented physical fitness norms for mildly (educable) mentally retarded boys and girls and served as a valuable tool for screening and assessing improvement.

The original events in the Special Olympics Program (1971) were based on the established physical fitness events and this program has been a massive effort in acknowledgement of the capabilities of functioning among the mentally retarded population.

Kelly and Robb (1974), Cipriano (1974), and Berryman (1973-76) currently have field projects, the objective of which is to identify staff competencies in the therapeutic recreation area. Recently the National Recreation and Park Association (NRPA) sponsored an invitational work conference to identify priority needs relative to research in leisure activity areas. A major need cited in many of the defined areas was a synthesis of the currently available factual data.

The occupational therapy area is another area which recently has put emphasis on perceptual-motor functioning. Banus (1971) discusses the terms 'Developmental Evaluation', 'Developmental Stimulation', and 'Developmental Therapy' and wrote,

> "I believe that our greatest strength lies in our knowledge of early neuromotor, psychosocial, and visual-perceptual-motor development and dysfunction (p. xii)."

She further emphasizes the capabilities of working with children in terms of prevention, habilitation, or rehabilitation - prevention through early identification of potential developmental disabilities of the preschooler and habilitation or rehabilitation of children of any chronological age who show developmental delay or dysfunction which reflects early detrimental sensory motor patterns.

Summary

The existing theory and research must always be the departure point if an area of study is to develop in some systematic manner. The scientific method 'has been' looked upon as being fairly precise - maybe too much so for the study of human interactions! In the development of the perceptual-motor/psychomotor area it has become increasingly evident that because of the variability which exists among exceptional children that field-based, 'quasi-experimental' research designs may be much more applicable than the stringent controls of the traditional experimental design. This is the same reason many educational researchers are leaning heavily toward newly developed evaluation and systematic observation models, e.g., Campbell and Stanley (1963), Popham (1972), Stufflebeam (1967), and Flanders (1970). The traditional statistical models in many instances have simply not provided the data or means to make the desired decisions. This is not to say that one should not be cautious of: the method of obtaining and size of samples, adequate controls, valid and reliable measuring instruments and program elements, rate of learning and retention variables, adequate design for making conclusions, etc.

Priority Needs

A. The state of the art dictates multidisciplinary involvement (or team approaches) in the development of high quality perceptual-motor programs for handicapped individuals. Physical educators with expertise of exceptional children are few and special educators with education and experience in the psychomotor domain are just as lacking.

B. For the exceptional child the major objective of perceptual-motor programing should be to improve the individual's day-to-day functioning through development of the individual's motor skills, thus not as a supplementary objective but as the primary channel to improve functioning when mental capabilities or communicative capabilities may be lacking.

This need dictates clear identification of those motor skills which will enable the individual to develop toward his potential when otherwise this might be impossible.

C. Another major need is the widespread dissemination and program implementation of adequately tested models! This, I see, as a major contribution of Stein's (1972-75) IRUC Project which has accumulated and referenced much of the current material available for exceptional children.

D. Continued basic research efforts, particularly those utilizing multivariate designs, need to provide the basis for answering many of the questions relative to the testing of theoretical models hypothesized.

The "Symposium in Research Methodology on Perceptual-Motor Development (1972)" stands as one of the recent major contributions toward evaluating strengths, weaknesses, and needs in research in the perceptual-motor area. Seefeldt suggested the following seven recommendations for future study of perceptual-motor issues:

I. Research to establish the validity of current practices
II. Descriptive and experimental research pertaining to perceptual-motor development
III. Teacher preparation particularly in observing and analyzing the movements of children
IV. Undergraduate education emphasis on the importance of motor skills in infancy and childhood
V. Education of parents and prospective parents
VI. Dissemination of information
VII. Multidisciplinary workshop on research in early childhood (pp. 107-109).

Of vital importance to any assessment or state of the art project is the recognition, at this point in time, of the developments in evaluation methodology, behavioral objectives and competency based approaches. Research and evaluation, for the purposes of this paper, should not have been assumed one and the same. It is far past the time to recognize that the tight restraints of experimental research design are not always a good match for field-based programs in the perceptual-motor/psychomotor developmental programing area. Particularly with handicapped individuals, where more times than not, the individual subjects are more different than alike, evaluation of individually specified behavioral objectives for assessment of a developmental program seems more logical than experimental group design models.

Another major concern at this point in time is clear recognition of the capabilities and limitations of certain disciplines. Physical educators, generally, are not special educators, not psychologists, nor highly trained in the visual area and the reverse is also true. A major need, which clearly stands out, is the involvement of interdisciplinary teams in research and program development. Physical educators must accept their responsibility in the perceptual-motor area as those trained with specific expertise in the psychomotor domain.

Seefeldt (1972) has indicated, it is generally conceded that the primary impetus for perceptual-motor programs was provided by psychologists and medical personnel, on the notion that motor activity is a precursor to, or a useful adjunct to, skills which are essential for academic achievement. This situation may be disconcerting to those who recognize within current perceptual-motor programs many of the skills which have historically been taught within physical education. However, it must be acknowledged that specific perceptual-motor systems are synonymous with such names as Kephart (1960), Delacato (1963), Frostig (1964) while the names of physical educators are conspicuously absent from the list of theorists and architects of programs. Therefore, it is of vital importance for those with expertise and years of training and experience in the motor areas, physical educators, be more involved in motor developmental concerns.

Concluding Statement

Urbach (1972) provided the following challenge for the future which would appear to have implications for exceptional children:

> The psychomotor domain holds catalytic keys to individual learning styles and also to the design of more effective instructional methodologies. Each instructional technologist is challenged to attempt his own synthesis through integration of psychomotor elements with those in the cognitive and affective domains.

Postscript

As a concluding remark from the writer a personal observation must be added. Many practitioners appear to be almost obsessed with finding the 'BEST WAY, METHOD, PROGRAM.' I'm sorry to say there is no BEST WAY; rather those charged with decision making must carefully assess the situation (problem, needs, goals, objectives, etc.) and develop an assessment, program, evaluation system to meet the local needs of the specific situation. As much as possible, this system should be (and I think it can be) based upon the available theory and research. (This may demand the use of consultants well versed in the theory and research.)

Cratty (1969) has discussed the specificity-generality question as he wrote,

> "Available evidence suggests that children participating in programs of perceptual-motor education improve only those attributes trained for and nothing more. Motor activity will aid a child to think to the extent he is encouraged to think about his movements. Programs utilizing stylistic, unmotivated action, in which children move about as directed by an instructor, have failed to modify the wide variety of attributes they claim to effect (p. 1)."

As the author of this paper, I feel I should at least be given the prerogative to make few judgements relative to synthesis of the parts. I would like to do this with the formation of four principles relative to sound directions in program development in the perceptual/psychomotor areas.

Principle 1

The reference point in program development, in attempts to alleviate a developmental dysfunction, should be the identification of the child's motor behavior age.

Principle 2

A factually based model, with related assessment techniques and program improvement activities, should serve as the basis for any perceptual-motor program.

Principle 3 (an administrative competency)

There appear to be three broad categories of motor skill development important in preventing, habilitating, or rehabilitating exceptional children. These are ESSENTIAL, FUNDAMENTAL, and FUNCTIONAL motor skills.

ESSENTIAL motor skills are those self-help skills absolutely necessary for acceptable functioning in our society.

FUNDAMENTAL motor skills are those necessary for peer acceptance and healthy living during childhood.

FUNCTIONAL motor skills are those which might contribute to career opportunities, e.g., musical, artistic, athletic, vocational-technical, etc.

Principle 4

There are three vitally important interrelated elements necessary in accounting for sound program development (in hierarchical order):

1. Child competencies - What product do we desire?
2. Learning environment - (Activities, materials, supplies), Is the environment conducive to producing the desired child product?
3. Teacher-Staff competencies - Does the instructor have the necessary competencies to organize and supervise a learning environment conducive to developing the desired child competencies?

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Supplementary Discussion

by IRUC Staff

Review of literature concerning development of perception or cognition by use of motor/physical activities revealed support both for and against this approach. Some studies indicated that selected perceptual skills were significantly improved following treatment with perceptual-motor activities; however, similar investigations showed no significant changes in perceptual skills evaluated. Other studies revealed an increase in I.Q. or academic achievement following participation in physical/motor training programs; however, these results were contradicted by studies with similar research designs which revealed no significant changes in intellectual function.

Hammill[1] reviewed studies of Frostig in addition to similar visual perceptual training programs and concluded, "...little correlation existed between measures of visual perception and tests of reading comprehension and that training visual perceptual skills, using currently available programs, has no positive effect on reading and possibly none on visual perception." Another review of literature[2] concluded that Kephart or Getman techniques for visual motor training were not particularly effective.

Although an extensive body of literature examines the premise that there is a motoric base to the intellect or that transfer of learning occurs from motor training to intellectual development, available information is conflicting, inconclusive, and confusing. As stated in Cooper's analysis, many problems existed in previous investigations--i.e., training programs that taught the test, uncontrolled Hawthorne effect, use of perceptual-motor batteries which had not been validated, misinterpretations of data, and weaknesses in research designs. Representative perceptual-motor studies are discussed below.

A study by Oliver in 1958[3] investigated effects participating for ten weeks in systematic physical conditioning exercises and activities had on mental characteristics of educationally subnormal, institutionalized boys. The experimental group (N=20; CA 13 to 15; I.Q. 57 to 86, $\bar{X}$ 70.1) received daily periods of physical education, individual remedial exercises, strengthening activities, and recreational games of a team nature in addition to academic work in numbers and English. The control group (N=20, CA 13 to 15; I.Q. 54 to 81, $\bar{X}$ 65.7) followed its normal schedule including two periods of physical education per week and daily organized games after school. Not only did the experimental group improve significantly in all measures of athletic achievement, physical fitness, and strength, but there were significant increases in I.Q.'s of 25 percent of the group. No significant improvements in I.Q. were reported among the control group. Oliver attributed these changes to emotional factors as affected by achievement, success, improved confidence, better adjustment, and a feeling of importance that the boys must have developed because of the interest in and attention centered on them. Results of Oliver's study have been misinterpreted by reviewers who concluded that physical activity directly improved intelligence.

Two studies reported in 1966 were designed to replicate Oliver's study. Corder[4] investigated effects of a planned program of physical education on intellectual development, physical development, and social status of educable mentally retarded boys. Subjects (N=24; CA 12-0 to 16-7; I.Q. 50 to 80) were divided into three groups of eight: 1) training--physical education program; 2) officials--Hawthorne control; and 3) control--no physical education or special attention. Results showed that the training group scored significantly higher than both officials and control groups on measures of physical fitness. The training group also scored significantly better than the control group in intellectual development as measured by the Weschler Intelligence Scale for Children (WISC); no significant differences were found between training and official groups on the WISC which Corder interpreted as suggesting that a Hawthorne effect was operative. No significant differences were noted among the three groups in social status measures.

Lowe[5] replicated Corder's study[4] and investigated effects of a varied physical education program on cognitive and physical development of educationally subnormal boys (N = 24; CA 11-10 to 15-1). Subjects were divided into three groups of eight: experimental, officials, and control. The experimental group participated in 20 one-hour physical education lessons over a four week period; the officials group received special attention and performed such duties as keeping score, maintaining records, and counting for members of the experimental group. The control group was only tested during physical education periods. Physical performance scores highly favored the experimental group. Only the experimental group made significant gains in intelligence as measured by Goodenough Draw-A-Man and Maxwell Shortened Version of Weschler Intelligence Scale for Children so it was concluded that the Hawthorne effect was not operative. Results supported Oliver's findings[3] and some of Corder's with respect to positive influences of active participation in intensive programs of physical education upon cognitive function of educationally subnormal boys.

Similar findings were indicated in studies which employed games as learning experiences. Humphrey[6] explored use of games and play involving purposeful gross motor and fine motor skills as a form of perceptual-motor function contributing to academic achievement of third grade children. Learning activities which incorporated concepts of math, science, reading, and language arts gave positive support to the effectiveness of perceptual-motor training in enhancing academic achievement.

Cratty[7] investigated effects of sequenced learning games intended to promote self-control, increased attention, as well as specific academic operations including verbal letter and pattern recognition, ability to write and recite the alphabet, spelling, and serial memory. The study revealed that the Negro and Mexican-American children involved in the treatment program improved significantly on selected academic operations as compared to control group, special physical education group, and small-group tutoring group.

To test the premise that children must go through specific sequential stages of motor development if they are to attain advanced cognitive development, Kershner[8] conducted a study to determine if inability of upper-limb congenital bilateral amputees to cross midline of the body was related to acquisition of a specific cognitive ability. The study indicated that amputee subjects ($\bar{X}$ CA = 11) were inferior in performance on a selected complex spatial representation task to physically normal children who were younger but who were matched on intelligence ($\bar{X}$ I.Q. = 106) with the amputee group. Severely impaired amputee children performed even more poorly than amputees whose physical impairments were classified as moderate, thus providing more support for the concept that developmental motor activities are important to cognitive growth. Kershner's findings were consistent with Goodman's study[9] which indicated that supplemental visual motor training had little effect on motor, visual, and integrated visual motor skills of orthopedically handicapped children since participation in the experimental visual motor program was no more beneficial than participation in the regular preschool program.

The selected studies discussed above are representative of research investigations that support the thesis that motor activities are instrumental in improving academic achievement and intellectual function. However, many other studies and analyses of literature revealed opposing conclusions.

An analysis of literature by Mann[10] questioned existence of perception and challenged reality of perceptual abilities, skills, capacities, processes, potentials, faculties, and functions. Mann discussed confusion over what tests do in fact measure and illogically conceived cause and effect relationships between motor activities and perceptual development. He suggested that perceptual training was the training of nothing at all and that educators need to get to work on teaching what the learning disabled child needs to learn!

Corder followed his 1965 investigation with another study[11] to ascertain whether an extensive physical training program led to significant improvement in certain physiological, physical, and psychological characteristics of mentally retarded girls (N = 30; CA 11-9 to 15-9; I.Q. 50 to 80). An experimental group (N = 15) met five times per week one hour per day, for 30 days to participate in a structured, progressive, and systematic physical education program. During this same period a control group (N = 15), closely equated with the experimental group, participated in a variety of quiet activities. The experimental group showed significant improvement over the control group in measures of physical and physiological levels in addition to enhancement of self concept. However, no significant changes were reported in intellectual development as measured by the Weschler Intelligence Scale for Children.

Changes in self concept and in physical and intellectual development of educable mentally retarded boys as a result of participating in a structured physical education program for eight weeks were assessed by Solomon and Pangle[12]. Four intact groups from special day classes for educable mentally retarded boys (N = 41; CA 13-5 to 17-4; I. Q. 47 to 85) were assigned randomly to one of four treatment groups: 1) physical education with immediate reinforcement, 2) physical education with remote reinforcement, 3) quiet and table games, and 4) control. Analysis of posttest and six-week follow-up data indicated: 1) levels of physical fitness were improved significantly, 2) immediate reinforcement resulted in greater improvement than remote reinforcement, 3) improvement demonstrated during posttesting remained significant during follow-up testing, 4) Hawthorne effect was not demonstrated, and 5) results did not support the role of physical education in contributing to significant I.Q. improvement.

Davis[13] studied effects of perceptually oriented physical education (PPE) on perceptual motor and academic abilities of kindergarten and first grade children. After 15 weeks, each of the 3 first grade PPE groups was found to be significantly better than the control group in perceptual-motor ability. No significant differences were found among the first grade groups in academic ability. No significant differences were found among kindergarten groups in either perceptual-motor or academic abilities.

Fisher[14] investigated effectiveness of participation in a structured program of perceptual-motor training on urban public school educable mentally retarded children (N = 102; CA 6-10 to 10-11; I.Q. 50 to 80). Each of 54 children was randomly assigned to one of three groups: Training (T) which participated in an individualized structured program of perceptual-motor training twice each week (30 minutes per session) for 4½ months; Hawthorne (H) which met with the trainer and played table games; and Control (C) which maintained regular classroom schedules. Analyses of perceptual-motor scores on the Purdue Perceptual Motor Survey following training revealed no significant differences among the three groups. No significant intellectual improvement was revealed as measured by two-month follow-up scores on Wechsler Intelligence Scale for Children (WISC), Wide Range Achievement Test (WRAT), and Stanford Achievement Test (SAT).

Robbins and Glass[15] failed to find any appreciable gain in intellectual function, reading, or in perceptual function on the part of children who were given a program of cross pattern creeping and crawling as used in Doman-Delacato mobility patterning techniques. This study is representative of similar findings in other investigations which did not support the Doman-Delacato theory of neurological organization.*

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*Neurological organization is described as a physiologically optimum condition which exists uniquely and most completely in man and is the result of a total and uninterrupted ontogenetic neural development. This development recapitulates the phylogenetic neural development of man.

In a review of literature by Stein[16], the following observations were made concerning physical activity, perceptual-motor, and recreation programs for children with learning disabilities:

- Test results can basically be interpreted that an individual has (or has not) performed certain tasks, evidenced certain behaviors on specific tasks under a given set of circumstances and conditions, and at a particular point in time.
- Transfer and/or application of learning occurs only under specific conditions, in certain ways, and with special considerations.
- Most all learning -- physical, academic, social -- is rather specific so the most fruitful approach is to concentrate on specific learning needs of individual youngsters.
- Physical activities which provide the participant with fun, successful experiences, improved teacher-student interpersonal relationships, increased self confidence, and enhanced self concept indirectly contribute to his or her intellectual growth.

An important question remaining unanswered is, why did some recipients of perceptual-motor training programs seem to benefit from the treatment while others did not?17 A priority need exists to determine social, emotional, mental, physical/motor, and personality characteristics of individuals who are successful and individuals who are unsuccessful in specific types of activities. One of the first research investigations concerning this question is being sponsored by the National Association for Retarded Citizens17 to identify success indices so that those not likely to benefit from participation in perceptual-motor training can be spared the futility of unrewarded efforts.

In addition to priority needs identified in Cooper's state of the art analysis, this supplementary discussion revealed the following priority research needs:

- Investigate the concept of generalization or transfer of learning as compared to specificity of psychomotor skills. Specific areas to be considered:
    - which attributes transfer in and among psychomotor, affective and cognitive domains.
    - under what conditions attributes transfer in and among these domains.
    - which attributes are not transferred.
- Determine social, emotional, mental, physical/motor, and personality characteristics of groups of subjects that successfully participate and those that unsuccessfully participate in specific types of activities,

with certain methods, in different organizational/administrative patterns, and with teachers/leaders possessing certain personal and professional characteristics.

- Identify specific psychomotor skills which are developed and assessed by specific psychomotor training activities and test items.

Priority Needs

Research and Demonstration

High Level

- Disseminate materials gathered by IRUC and apply resource/research data to various program/activity situations.
- Emphasize field-based, quasi-experimental research designs in addition to experimental studies to investigate (1) validity of current practices, and (2) perceptual-motor development.
- Use interdisciplinary teams to design and conduct research studies.
- Determine social, emotional, mental, physical/motor, and personality characteristics of subjects who are successful/unsuccessful in specific types of activities.
- Identify skills developed and assessed by specific psychomotor training activities and test items.
- Compare generalization or transfer of learning to specificity of psychomotor skills in terms of (1) attributes that transfer, (2) conditions under which attributes transfer, and (3) attributes that do not transfer.

Mid-Level

- Replicate previous factor analytic studies with different populations and age groups.
- Continue basic research efforts, particularly those studies with multivariate designs to answer questions relative to testing of hypothesized theoretical models.

Personnel Preparation

High Level

- Emphasize observation and analysis of movements of children throughout preparation programs.
- Emphasize importance of motor skills in infancy and childhood during undergraduate preparation.
- Conduct interdisciplinary workshops dealing with research of early childhood groups.
- Use interdisciplinary teams in professional preparation programs.

Mid Level

- Emphasize that major goal of perceptual-motor programing is to improve individual day-to-day functioning through motor activities.
- Provide education for parents and prospective parents regarding importance of motor activities and developmental sequences to be observed.

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PHYSICAL EDUCATION, RECREATION, AND PSYCHOMOTOR FUNCTION OF MILDLY AND MODERATELY MENTALLY RETARDED PERSONS*

State of the Art

State of the art analyses dealing with physical education, recreation, and psychomotor function of mildly and moderately mentally retarded persons reveal an extensive body of knowledge. This is in part due to research conducted during the last ten years by physical educators, recreation specialists, special educators, psychologists, and other interested personnel. Many individual research studies have been: (1) published in the form of masters theses, doctoral dissertations, and special project reports; (2) included in abstracts of research proceedings and American Alliance for Health, Physical Education, and Recreation National and District conventions; (3) found in selected journals, periodicals, and newsletters; (4) reported at various special conferences and meetings; and, (5) obtained from different information systems and resource centers.

Emphasis upon this area of research in the late sixties and early seventies was probably influenced by:

- publicity and information which provided stimulus for research in these areas;
- graduate professional preparation programs with research requirements which increased dramatically in special education, physical education, recreation, and related areas;
- questions raised by personnel in the field about various aspects of programs and activities in these areas;
- emphasis upon credibility of and accountability for programs and activities in these areas;
- interest in perceptual-motor programs and activities in infant/child growth and development in general and in cognitive development and academic performance of mentally retarded persons in particular; and,
- efforts and support of federal agencies such as the Bureau of Education for the Handicapped and private groups such as The Joseph P. Kennedy Jr. Foundation.

With full recognition of various limitations of research in general and that included in the IRUC/AAHPER bibliography in particular, review and analyses of these studies reveal:**

- Physical fitness, motor ability, and physical proficiency levels of mentally retarded persons can be improved; increasingly mildly

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*Research Bibliography in Physical Education, Recreation, and Psychomotor Function for Mentally Retarded Persons (April 1975) contains analysis of research studies dealing with physical education, recreation, and psychomotor function of mildly, moderately, severely, and profoundly mentally retarded persons. This State of the Art paper is based primarily on information from studies reviewed in the comprehensive bibliography which deals with mildly or moderately mentally retarded subjects. The research bibliography is available from American Alliance for Health, Physical Education, and Recreation, 1201 Sixteenth St., N.W., Washington, D.C., 20036, $7.00.

**Readers are encouraged to review indices and related content analyses in the bibliography for additional information and material dealing with research trends in these areas of concern.

(educable) retarded persons are achieving physical and motor tasks in same distribution found in the general population. While current research is not as definitive in this respect for moderately (trainable) retarded persons, recent trends from studies, empirical evidence, and subjective observation suggest higher motor and physical potential than has been reported or expected.

- Evidence suggests that the motor abilities of moderately and mildly retarded children are organized similarly to those of normal children and that attainment of these abilities follows similar developmental curves for both groups.

- Retarded persons can learn all motor skills their nonretarded contemporaries learn; there is a great deal of overlap in performances of mentally retarded and nonretarded individuals.

- Retarded children and youth can profit from the same kind of motor experiences as normal children, provided the state of learning and the how to is congruent with learning characteristics of retarded populations.

- Physical education and recreation activities must be broken down into small components and a basic simple to complex principle of teaching fully used.

- Motivation and individual success are cornerstones for a successful overall program; success breeds success and often leads to reversal of the failure-frustration cycle in which so many retarded persons have been locked. Self concept, self-confidence, and self-image can be improved through active participation in physical education, recreation and psychomotor activities by retarded persons of all functional levels.

- Retarded persons of all ages can accomplish worthwile objectives when provided with appropriate, sequential, and progressive programs and opportunities within the scope of their individual abilities.

- Little is known about relative effectiveness of various types of programs. Information related to effects of duration, teacher type, time/day, reinforcement, retention, and teaching strategies are lacking.

- Little transfer of skill has been shown from one activity to another. Conversely, there is great specificity in motor activity and learning as transfer appears to occur only under specific conditions.

- Substantial correlation between motor performance, physical proficiency, and intelligence has been noted in mentally retarded subjects, especially those at lower functional levels--i.e., severely, profoundly, and some moderately retarded persons.

- Novelty activities, motivational devices, unusual programs, and a variety of methods contribute to successful performance and in stimulating retarded persons to achieve.

- Fine motor skills appear to be an important attribute in developing vocational skills that can be used in sheltered workshops or in jobs per se.

- Social relationships, peer acceptance, and other indicators of true group interaction and integration do not automatically result for retarded children through active participation in physical education, recreation, and related activities. Although some studies have shown positive relationships amoung a variety of physical/motor and social characteristics, others have shown retarded youngsters in both regular and special physical education programs less accepted and more rejected at the end of such experiences than at the beginning.

- Today information and generalizations about physical fitness, motor ability, and physical proficiency levels of moderately (trainable) mentally retarded persons are made in the same ways they were made about mildly (educable) retarded persons five to fifteen years ago. Research, empirical, and practical experiences gained from extensive work with mildly retarded persons are being shown applicable and appropriate to moderately retarded populations.

- Bases for research studies, project support, program efforts, and statements about physical fitness, motor ability, and physical proficiency of mentally retarded populations continue to be dominated by statistics and results of studies at least six or seven years old. Little use or application of findings from recent studies have been noted.

- Differences have been found in studies involving institutionalized populations and those enrolled in public school programs. In general, those from residential facilities have consistently scored lower than those in public school programs.

- Specific contributions of active participation in physical activity programs to other facets of a mentally retarded child's education and development have been reported. These activities have served as bases for art projects, English assignments, oral expression, safety lessons, and arithmetic manipulations. Self-concept has increased; greater vocational productivity has resulted; and a variety of speech impairments have improved in the stress-free, noncompetitive, and accepting environment of these programs which were helpful to the individual in building self-confidence and becoming better able to deal with stresses of everyday life.

- Although certain areas and topics have been studied much more than others, a great deal of this repetition has been duplication rather than replication, application of findings or pursuing research recommendations.

- It is clear that performances of mentally retarded persons can be improved by programs of physical activity. It is also apparent that most studies reported do not provide replicable forms of instruction which effectively modify motor performances of mentally retarded

> participants. Ability of a study to be replicated is of crucial importance and has been completely ignored in reporting results of most studies. Presumably, when a study is conducted there is a rationale for the program and selection of dependent measures. In instances where significance is obtained, and others would like to implement an effective treatment, it is not enough to report the program in terms of a general descriptive statement or even reference to a book or guide which provides a complete description of that treatment. To take this approach forces one to make the assumption that the program occurred as intended or as described; anyone who has taught in public schools is quite aware of the fallacy of this assumption. The important information necessary to replicate is that information which describes what did occur, not what was intended to occur. This same information is equally important for the full interpretation of nonsignificant results as for significant results. Of crucial importance to improving motor performance capacity of mentally retarded persons are systematically designed, replicable physical education, recreation, and psychomotor function materials which have been evaluated and deemed effective by evidence collected.*

While many of these findings are little different from reviews and analyses reported as much as twelve years ago;** more studies, reports, and evidence make statements more positive and definitive; questions and suppositions of the past now can be answered with research, empirical, and experimental evidence. Analyses suggest priority needs to be considered in the future.

PRIORITY NEEDS

Research and Demonstration

Conduct research studies, projects, and programs to determine:

High Level

- How does the Hawthorne effect influence results and performances of retarded persons in physical education, recreation, and/or psychomotor activities?

- Do retarded participants accomplish more in the mainstream or when they participate exclusively in special/separated programs and activities? How can determinations be made when an individual is ready to participate in regular programs and when he should remain in special programs and activities? Do certain activities lend themselves more to mainstreaming and others to participation in special programs? Are certain activities more appropriate for homogeneous groups based on handicapping condition, level, or retardation, and/or skill levels and others for heterogeneous groups?

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*Wessell, Janet A., et al. "Studies Related to Moderately (Trainable) Persons." Challenge 10:2: February-March 1975. Washington, D.C.: American Alliance for Health, Physical Education, and Recreation.

**Stein, Julian U.; Pangle, Roy. "What Research Says About Psychomotor Function of the Retarded, "Journal of Health, Physical Education, Recreation", April 1966 (Vol. 37, No. 4), P. 36; and Stein, Julian U., "Motor Function and Physical Fitness of the Mentally Retarded", Rehabilitation Literature, August 1963 (Vol, 24, No. 8), P. 230, provide additional discussion of research needs in this area.

- What are needs for more studies on influences of recreation participation and activities on mentally retarded participants? (There are now substantially fewer studies in recreation than in physical education).

- What is really being measured by various test/evaluation instruments batteries, and items? (This is especially crucial in that the same devices have been used in study after study and program after program). How do these instruments in themselves affect results, conclusions, findings, and generalizations made from their use?

- What are inter and intra-etiological relationships with motor performance, physical proficiency, and movement activities?

- What are effects of different types of program placement, specific activities, time allotment, and various methods and techniques on performances, test results, and research findings?

- To what extent can outdoor education, outward bound, survival and wilderness camping techniques and approaches be used to improve learning opportunities and stimulate total growth and development of mentally retarded persons regardless of severity of the condition? What other general and/or specific recreational activities have special relevance to and are applicable for retarded persons? To what extent can various recreational activities be used effectively in developing gross and/or fine motor skills, physical fitness traits, and related movement/motor characteristics?

- What are similarities/differences between motor learning and learning through motor activities?

- How can relationships of motor/physical performance/processes to cognitive development, academic achievement, and social/emotional development be assessed?

- To what extent and how can the issue of transfer vs. specificity in learning be addressed?

- In what ways can personal characteristics, traits, and qualities that make it more/less likely that certain individuals will succeed/fail in specific programs/activities, in certain settings/environments, or through given methods/approaches/techniques be identified and applied?

- Which physiological parameters can be explored in terms of effects/contributions/values of certain programs, activities, modalities for retarded participants at various functional levels?

- What are relative effectiveness, efficiency, and competence of personnel at all program levels trained in college/university settings compared with persons receiving greater amounts of field opportunities and experiences?

- What are short and long range effects of early childhood programs that emphasize early cognitive function, academic growth, and intellectual development compared with programs placing greater emphasis on learning and educational processes through play, exploration, discovery, and fun? What are the effects in all domains--psychomotor, affective, and cognitive?

- How can applied research be emphasized through demonstration projects and activities that can be generalized and utilized in similar programs and activities?

- What are relative effects and effectiveness of play, free play, and progressively structured play situations upon total growth, development, and progress of retarded individuals at various functional levels? What are the effects in all domains?

- What are personal characteristics and traits that indicate when an individual is ready to learn certain physical/motor skills most expeditiously?

- What are specific contributions of physical activities, movement, motor activities, play, and recreational pursuits upon improved socialization and social function of mentally retarded persons?

- To what extent are research techniques, approaches, and designs effective in the physical sciences applicable and appropriate as modus operandi in the behavioral sciences?

- To what extent are functional characteristics, antisocial behavior, self destructive traits, and related symptoms of severely and profoundly mentally retarded persons products of institutional life? In what ways can reflex training, infant stimulation, motor development, physical activity, and recreation programs contribute to improving personal development and quality of life of such individuals?

- What are personal characteristics and professional competencies of teachers/leaders who function more/less effectively with specific groups/individuals, under given conditions, in various organizational/administrative structures, at different levels, and in specific program environments/situations?

Mid Level

- What are influences of intellectual loading, i.e. complex physical/motor activities requiring high degrees of cognitive function for successful performance on results of studies and findings in these areas?

- What are effects of continued utilization of research results from studies reported five to ten years ago (as opposed to more recent projects with opposing findings) on programs, expectations, and development of individual retarded persons?

- What do test norms really indicate? What do they tell? To what extent have norms been revised and made appropriate for different groups of subjects in various situations and under different circumstances? Are instruments appropriate for populations for which they have been designed (i.e., analyses show that the Youth Fitness Test has been used almost three times as much as the Special Fitness Test in studies involving retarded subjects)?

- What effect does utilization of the same subjects in a series or several independent studies have on results and findings? What effects have test instruments and personal relationships with instructors, researchers, leaders, and testers had on findings, results, conclusions, and performances?

- How can success, feelings of accomplishment, fun, and other affective contributions be measured objectively?

- How can conflicting results in studies be rationalized and explained?

- How can the large amount and great variety of program materials be effectively and appropriately evaluated in terms of their effects on children/populations each item is designed for use with?

- In what ways can more longitudinal and reverse longitudinal studies in which individuals and groups are studied from the present back through events, activities, and experiences that affected their growth, development, and achievement positively as well as negatively be encouraged?

- What are specific short term and long range effects of categorical labeling and generalizations in institutionalization and other dehumanizing activities upon growth and development of mentally retarded persons?

- What are implications of active participation in physical education, recreation, and psychomotor activities upon prevocational readiness, vocational proficiency and related work performance of mentally retarded persons?

Personnel Preparation

High Level

Provide inservice and preservice training materials and opportunities through paraprofessional, undergraduate, and graduate professional preparation programs, workshops, seminars, symposia, orientation sessions, institutes, and conferences to:

- Apply knowledge gained by previous and on-going research investigations/projects/programs to enhance quality of programs, activities and services provided at the grassroots level.

- To what extent can and should mentally retarded persons at various functional levels be encouraged and allowed to be their own advocates for educational and recreation programs and activities including at decision and policy making levels?

- What kinds of differential staffing patterns are practical and feasible for projects/programs so that leader/teacher--participant/student ratios can be reduced through judicious use of paraprofessional personnel supervised by well-qualified, trained, and experienced personnel?

- What are and should be unique roles and contributions of various disciplines, specializations, activity modalities, and organizations in meeting needs of retarded populations through greater interdisciplinary cooperation and multiagency teamwork?

- How can personnel at grassroots levels and in direct program service capacities be encouraged to pursue wildfire research projects in which they set up studies in their own programs and with their own clients to obtain answers to their own questions and problems?

- How can confusion in terminology and semantics rampant in physical education, recreation, special education, and related disciplines and specializations where the same words are used for different concepts and different words used to mean identical concepts be eliminated or at least greatly minimized?

- What are course/competency needs for all school physical education teachers and community recreation personnel to enable them to deal with retarded populations in regular program settings?

- How can information, input, and research experience evidence from other disciplines and fields such as nutrition be more fully used in programing and meeting needs of retarded participants through physical education, recreation, and related programs?

PHYSICAL EDUCATION, RECREATION AND RELATED AREAS FOR SEVERELY AND PROFOUNDLY MENTALLY RETARDED INDIVIDUALS

State of the Art

Currently, large numbers of severely and profoundly mentally retarded[1] individuals are being entered into physical education and/or recreation programs in regular and special program settings; current projections indicate that even greater enrollments will occur in the near future. Acceleration of such programing has been due primarily to legislation and litigation mandating right to education, right to treatment, and procedures for normalization and deinstitutionalization of severely and profoundly mentally retarded persons.

As a result of this trend, physical education, recreation and other related personnel are urgently requesting information and assistance for working with severely and profoundly mentally retarded persons. This demand has caused need to analyze the current state of the art in physical education, recreation, and related areas for severely and profoundly mentally retarded individuals. This paper reviews information available from resources such as program literature, research/demonstration projects, books, manuals, limited distribution guides, program descriptions, input from personnel, and research literature. This search for information was considered exhaustive but not necessarily totally comprehensive since it was assumed that some resources were not located.[2]

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[1] This paper deals with retardation below trainable (moderately) mentally retarded level--many personnel erroneously use the terms trainable and severely mentally retarded synonymously.

Severe mental retardation--when intelligence test scores range between four and five standard deviations below the norm (20 to 35 on Stanford-Binet and 25 to 39 on Wechsler Scales (extrapolated); such persons require continuing and close supervision; sometimes called dependent retarded.

Profound mental retardation--when intelligence test scores are more than five standard deviations below the norm (19 and below on the Stanford-Binet and 24 and below on the Wechsler Scales (extrapolated); such persons require continuing and close supervision but some persons may be able to perform simple self help tasks; profoundly retarded persons often have other conditions and require total life support systems for maintenance.

...as defined by Manual on Terminology and Classification in Mental Retardation, American Association on Mental Deficiency/Special Publication Series No. 2. Herbert J. Grossman, M.D. (Editor). Washington, D.C.: American Association on Mental Deficiency, Revised 1973. "Glossary Section." p. 149.

[2] Detailed information on this state of the art is contained in Physical and Recreational Programing for Severely and Profoundly Mentally Retarded Individuals. ED 093 113. Information and Research Utilization Center in Physical Education and Recreation for the Handicapped, June 1974. (Available from ERIC Document Reproduction Service, P.O. Box 190, Arlington, Virginia 22210).

LEGISLATION AND LITIGATION

Severely and profoundly mentally retarded persons from ages two or three to 21 increasingly are being enrolled in public schools due to *zero-reject* principles in federal and state legislation mandating education in least restrictive environments for *all* individuals, regardless of type or severity of handicapping condition. Public school physical education teachers frequently lack competencies to program for this level student and therefore, are urgently requesting assistance.

In many public treatment and direct care facilities, continuum care settings, and community programs throughout the nation, large numbers of severely and profoundly mentally retarded persons are being provided recreation programs as a result of litigation demanding *right to treatment* of these people. Recreation personnel at these facilities are demanding assistance due to the influx of severely and profoundly mentally retarded persons.

NORMALIZATION AND DEINSTITUTIONALIZATION

Other factors increasing number of severely and profoundly mentally retarded persons participating in regular, ongoing programs are *normalization* and *deinstitutionalization* procedures. Normalization legislation in Scandinavian countries since the 1960's has resulted in movement of mentally retarded individuals from residential situations to hostels, group and foster homes, special community programs, and apartments. Deinstitutionalization procedures in many states are causing large numbers of severely and profoundly mentally retarded residents from state hospitals and schools to move into community living facilities. When these individuals are placed in the community and subsequently integrated into community recreation programs, demand for assistance from recreation personnel is increased greatly.

LACK OF PROGRAMING

In many public and private treatment and direct care facilities, continuum care settings, and community programs throughout the nation, infants, children, youth, and adults are receiving well-planned and beneficial programs of physical activity. These activities are being provided because it is recognized that even though these individuals are labeled severely and profoundly mentally retarded, they need the contributions and experiences of physical activity the same as any other human being. Although some efforts have been made, many situations still exist in which little or no programing is taking place.

There are differing reasons why numerous agencies, groups, and organizations do not provide proper physical activity for these individuals. Some of the most often mentioned rationalizations are lack of staff, money, time, facilities, and knowledge. In addition, many people feel that institutionalized profoundly mentally retarded persons are or nearly are vegetables and should either just be kept alive, clean, and fed or not kept alive and allowed to die--some states have *death with dignity* laws that promote this concept. Eventually, the living vegetable theory evolves into a subsistence type of living for the patient under warehouse or storage room conditions. Currently, this custodial maintenance premise is being attacked on many fronts by advocates for mentally retarded individuals and groups who identify and forcibly obtain the rights of the person who has been labeled as mentally retarded.

PROGRAM LITERATURE

Scarcity of Available Printed Materials

There is a paucity of high quality practical information on this subject which can be easily obtained and utilized by teachers/leaders on the firing line. In numerous instances, excellent information is stored in the heads of grass roots level practitioners who have never had opportunities or taken the time to put their knowledge and experiences down on paper. Conversely, abundant written program descriptions and inservice training guides are available on a limited distribution basis from different programs; these usually are not printed in sufficient quantities for extensive outside dissemination. In addition, scanty practical information is included in books, even those with titles relating to this subject since many of the publications are philosophical and theoretical in nature and offer few practical methods for modifying regular activities.

Watered Down Versions of Other Programs

Some available materials are simply watered down versions of programs for moderately (trainable) mentally retarded persons which are not completely appropriate. Other materials are duplications of regular physical education curricula and recreation programs with negligible modifications which are completely inadequate for needs of these participants. Although some activities for higher level mentally retarded individuals are also indicated for severely and profoundly mentally retarded persons, there are distinct differences between these populations that must be considered.

Individual Differences

Extreme individual differences are seen among these participants. As level of retardation is lowered, more severe secondary physical impairments accompany social-emotional problems. Some people are aggressive, some withdrawn, and others hyperactive; many are multiple handicapped. In addition to ambulatory clients, some are wheelchair-bound, while others are so-called crib cases. Numerous residential patients depend completely upon others for care although some are semi-independent. When left to themselves, most play little or not at all. Accordingly, program goals based upon individual needs are imperative.

PROGRAM GOALS

Review of available literature reveals program goals for individual social-emotional, mental, and physical development such as:

- Optimum arousal levels
- Enhanced responses to and discrimination of sensory stimuli
- Efficient motor-perceptual skills to learn about environment

- Increased independence
- Efficient self-help and activities of daily living skills
- Mature social interaction
- Effective communication abilities
- Improved physical/motor growth and development
- Personal fulfillment and enhanced amusement

Physical and recreational activities are provided after determining program goals and behaviors to be developed based upon functional levels and needs of each person. The most effective approach in providing the program apparently has been the utilization of a rehabilition-education team.

Rehabilitation-Education Team Approach

In this approach, the program is established and conducted as a result of communication with all members of a rehabilitation-education team such as physicians, social workers, counselors, psychologists, psychiatrists, occupational, physical, corrective, recreational and speech therapists, physical educators, nurses, administrative and support personnel, volunteers, and family. This rationale is partially illustrated in the film Someone Waiting* which initially depicts a state hospital in which bed-confined children with severe cerebral dsyfunctions and multiple conditions are given custodial care and for the most part, are not given physical activity. The staff and children exist in dull, uninteresting, and sedentary circumstances until aides and nursing staff ask therapists for assistance. This communication results in provision of appropriate environmental stimulation and therapeutic handling of youngsters. The children's responses to personal loving care, new physical activities, and sensory stimulation experiences are quietly but vividly shown. Although improvements are slight in most cases, progression was made--for example, some children were able to lift their heads for the first time, to eat more independently, and to move their bodies better.

RESEARCH LITERATURE

Review of research literature concerning physical education, recreation, and related programs for severely and profoundly mentally retarded persons indicated little research activity on this subject. Search for studies concerned with subjects with severe and/or profound levels of retardation also was hampered by semantic problems. For example, studies using obsolete terms such as moron or imbecile to describe subjects were not selected for review since these persons were considered too high in intellectual function; however, studies that employ the term idiot were selected since this indicated severe or profound levels of retardation.

Many studies utilized broad terms such as mentally retarded, mentally defective, mentally deficient, feebleminded or institutionalized mentally retarded; these studies were not selected since they usually were concerned with populations at higher intellectual levels. A number of studies using these general terms did not give mental age and/

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*Somebody Waiting, 16mm, sound, color, 25 minutes, is available from Extension Media Center, University of California, Berkeley, 94720.

or I.Q.; however, studies were selected which used general terms in addition to I.Q. levels in accordance with definitions and intellectual levels described on page one of this paper. Other criteria employed to select studies for review were:

- Minimum pre/post measures, case studies, surveys, historical, philosophical, descriptive, experimental, and other legitimate research designs and methodologies.
- Broad interpretations of physical education and recreation programs and activities, including related educational/training areas.
- Contributions to or help in programs and activities for severely and/or profoundly mentally retarded persons.

Implications of studies concerned with mild to moderately retarded persons

Although studies relative to higher level mentally retarded persons were not selected for analysis, certain implications from this research area are appropriate to mention. Previous investigations of motor and physical fitness skill levels of mild to moderately mentally retarded individuals have shown skill levels generally to be lower than those of non-retarded subjects. Since more severely and profoundly mentally retarded persons have increased secondary physical impairments and poorer progression in growth and developmental milestones than higher level retarded individuals, there is a tendency for more severely involved persons to be even more deficient in these skill areas. Although little research has been accomplished with severely and profoundly mentally retarded persons, it is assumed that results of studies indicating poor or low performance levels of mild and/or moderate retarded subjects in physical fitness, coordination, cardiorespiratory endurance, muscular strength and endurance, flexibility, balance, and locomotor skills are also applicable to more severely retarded persons. Indeed, these performance levels could be expected to be even lower.

Implications of other research areas with higher level subjects should also be considered for severely and profoundly mentally retarded individuals. For example, several studies [1,2,3,4,5] indicated a positive relationship between mental or intellectual functions and motor ability both in performance levels and understanding of complex tasks. Therefore, it is assumed that lower levels of intellectual functioning of the severely or profoundly mentally retarded person would be associated with even poorer performances in motor tasks and ability to perform complex tasks. This assumption is consistent with other studies [6,7,8] which indicated that more physically mature children scored higher than less mature children on evaluative criteria to determine intellectual, social, and emotional ability.

Physical/motor growth and development of severely and profoundly mentally retarded persons

Studies [9, 10, 11, 12, 13, 14, 15, 16] that dealt with severely and/or profoundly mentally retarded populations revealed delayed or deficient growth and development levels. Even greater deficiencies in physical growth and development were determined for severely retarded persons with organic etiologies.[17, 18,] Wellmen[19] conducted a survey in 1931 of research dealing with physical growth including such areas as motor development, physical achievement, and relationships among physical, mental, and motor development. Studies available at that time indicated that mentally retarded persons were shorter and lighter than average and that imbeciles (moderately retarded) and idiots (severely retarded) were shorter and lighter than feebleminded (mildly retarded) persons. In general, there was a slight positive correlation between mental and physical development, the degree related to conditions and combinations of traits being compared.

Other related studies revealed 1) increasingly lower levels in physical ability, body size, and adaptive behavior as mental retardation became more severe[20], 2) increased motor function following treatment with a motor development program[21] and physical education instruction,[22] 3) improved awareness, , stimulated movement activity, improved ability to manipulate environment, enhanced posture and locomotor skills and social maturity following sensory motor training program,[23] and 4) improved attention control following training in balance beam walking[24].

A study conducted by McCraw and Owen[20] evaluated institutionalized mentally retarded individuals in terms of physical ability, body size, maturity, and levels of adaptive behavior. Subjects (N=1292, males 545, females 747; CA 6 to 51) were given a motor fitness test consisting of 25-yard dash, standing broad jump, and 300-yard run. Motor ability was assessed through administration of Brace Motor Ability Test which was scored on a four point scale rather than the usual pass-fail method. Body size was expressed in terms of height and weight; skinfold measurements of arms and shoulders were taken. Subjects were classified according to adaptive levels and age: I-profoundly retarded, II-severely retarded, and III-moderately retarded. Groups were set up in three-year spans from six to 20 and in five year spans from 21 to 50. Examination of data in terms of these classifications revealed: 1) an increase for both male and female subjects in height, weight, and skinfold measurements at all adaptive levels within each age group up to 26, 2) performances on Brace Test and three fitness items improved markedly for both sexes from adaptive level to adaptive level with differences between levels I and II significantly greater than those between levels II and III, and, 3) performances on Brace Test and three fitness items increased with age until about age 20 from which point there was a gradual decrease.

Auxter[21] conducted a motor development program for non-ambulatory, profoundly retarded persons (N=12; CA 12 to 30; MA 6 to 18 months) in a state residential facility. Subjects were trained on a one-to-one basis in a program designed to 1) increase range of motion, 2) develop extensor strength, 3) improve proprioceptive stimulation, and 4) develop integrative function of joints. Subjects had many common problems including tight gastro-soleus muscles, hamstrings, and hip flexors. Behavior modification was used throughout the program as subjects were given an M and M candy with each correct motor response. Although no statistical analyses were reported, the program was felt to yield good results. Gains were made in some aspects of the program in all cases; with increased motor function, subjects seemed to engage voluntarily in a variety of motor activities.

Jenkins[22] investigated values of physical education instruction as a means of improving gross motor performance of trainable mentally retarded boys (N=38; CA 9 to 14; IQ 20 to 50). Experimental and control groups were compared on Heath rail-walking, standing broad jump, 30-yard dash, and an original hopping test. The experimental group met for an hour a day, five days per week for seven weeks, and received both individual and group instruction; each period was divided into four segments with 10-12 minutes spent in walking, running, hopping, and jumping activities. Various behavior modification techniques and procedures were used. Differences among all pretest scores were nonsignificant; posttest scores showed significant improvement and differences favoring the experimental group in all but the 30-yard dash.

Webb [23] conducted a study in which severely and profoundly mentally retarded subjects (N=32, males 17, females 15; CA 2-6 to 17-6, $\bar{x}$ 9-11; social ages 2 to 21 months, $\bar{x}$ 8 months) were selected by ward personnel to participate in a special training program for an hour a day, four days a week--training period varied from five and one-half to ten and one-half months. Training techniques were designed to 1) increase level of awareness, 2) stimulate movement, 3) improve ability to manipulate the environment, and 4) develop posture and locomotion. Pre and posttest evaluations were made with a special rating scale (AAMMP Index -Awareness, Movement, Manipulation of the Environment, Posture and Locomotion) to assess sensory motor development. Each subject was also evaluated with the Vineland Social Maturity Scale (VSMS). Measures of control tendencies indicated a slight group trend toward improvement on both instruments; a correlation of .78 was obtained between the two measures. Clinical analysis of changes between pre and post treatment behavior tended to be more meaningful than statistical comparisons.

Maloney and Charrette[24] tested effectiveness of a gross motor approach (balance beam walking) for training attention control with severely and profoundly retarded children (CA 6-12). Following training, the walking board group learned in significantly fewer trials than the control group on a two choice discrimination training problem. Authors felt effects of training enhanced attention-control in the experimental group; however, this study did not provide enough support that such transfer did occur.

Movement behavior of severely and profoundly mentally retarded children related to objects in environment

Selected objects in the environment--ball, blocks, climber, inner tube and wagon--elicited specific object preference by individual subjects and inactive and sedentary movement behaviors on the part of all children involved in a study by Conover. [25] When these results are compared to another study [26] which found that a toy top initially induced active movement behavior which was followed by decreased movement upon adaptation to the object, it appears that environments containing more of a variety of objects which are changed before adaptation and human contact elict desired arousal and motivation needed for increased movement activity.

Conover[25] determined object preference and movement behaviors evoked by selected objects (ball, blocks, climber, inner tube, and wagon) from 11 three to seven year old custodial and trainable mentally retarded boys. Data were collected from: 1) Study of Object Familiarization to introduce subjects to each object individually to reduce possible familarity/novelty effect; each subject was placed in a room with one object at a time--no teaching or demonstrating was done with an object; each subject was left alone in the room with an object for five minutes during which time his behavior was recorded; 2) Study of Object Preference to determine which object was most preferred when all five objects were presented simultaneously; each subject was placed in the center of the objects and was left alone in the room with objects for eight minutes during which time his behavior was recorded. Major findings showed that subjects when considered as a group displayed no object preference; however, individual subjects did demonstrate preference for certain objects. Even though such objects evoked movement behaviors, presence of objects in a setting devoid of human contact was not sufficient for the establishment of stimulating and functional environments. No correlations between chronological age and time spent with an object were significant. Significant positive correlations existed between motor age and time spent with the ball and total time spent with all objects combined. A positive significant correlation existed between IQ and time spent with the wagon.

Ellis and Pryor[26] attempted to quantify gross bodily activity in a naturalistic situation which permitted locomotion. Subjects (N=29; CA 3-10 to 13-6; IQ $\overline{X}$ 17) were brought individually into an enclosed test room in which the photronic principle was used to quantify movement; beams of light were criss-crossed at two-foot intervals in the room, Movement by a child, while playing with tops interrupted a beam which closed a circuit containing an impulse counter; light beams were visible to the children. Each child was placed in the room for one 20 minute period each day for eight days. Raw score measures of activity ranged from three to 1,576 and were positively skewed. There appeared to be a clear trend in mean scores, possibly indicating a gradual reduction in activity level as subjects adapted to the apparatus. In correlating for ten and 20 minute intervals, it was found that scores were higher for the entire 20 minutes than for the first ten minutes.

Evaluative criteria for use with severely and profoundly mentally retarded subjects

Two studies [27,28] attempted to establish evaluative criteria for determining motor age and motor abilities of severely and profoundly mentally retarded persons

Purposes of a study by Calder[27] was to develop a method of determining motor age of severely or profoundly mentally retarded children and to develop pilot motor age profiles to give diagrammatic representation of range and specificity of an individual's motor ability. The researcher's objective was to provide practitioners with a test to enable them to measure individual motor ability of children, to establish current level of functioning of individual children, to use as a basis for an individualized physical activity program, and to measure a child's progress. Subjects (N=56, 37 boys, and 19 girls; CA 4-1 to 18-11, $\overline{X}$ 10-2, boys $\overline{X}$ 9-4, girls $\overline{X}$ 11-7; IQ 51 and lower) were given 83 tests, classified as to balance and maintenance of posture, locomotion, and receipt and propulsion and scored on a pass/fail basis. Researcher concluded that functional abilities and patterns of exceptional children were different from normal children. Specific mention was made of importance of looking at individual motor patterns and specific abilities of youngsters rather than general trends based on such characteristics as chronological age, mental level, or diagnostic category.

A report was present in 1967[28] of a feasibility study which attempted to modify existing tests by simplifying instructions and equipment to assess motor abilities of mentally retarded persons. Specifically this pilot study attempted to: 1) adapt for use with mentally retarded populations several psychomotor and physical proficiency tests (psychomotor and Fleishman's Basic Fitness Tests) available in the American Institutes for Research's (AIR) Human Skills Research Laboratory, 2) select a sample of the Jewish Foundation for Retarded Children population (N=41, male 30, female 11, CA 6-25, $\overline{X}$ 13; IQ 18 to 16, $\overline{X}$ 43; 18 residents, 23 day care) to test, 3) use modified AIR Tests to measure performances of the selected population, 4) develop prototype ability profiles on individual subjects, 5) evaluate goodness of performance tests for use with mentally retarded persons, and, 6) assemble basic information on each subject to explore relationships among performance measures and age, sex, IQ, classification, and major impairment symptoms. Analyses indicated that: 1) ability measures might be useful for differentially assigning mentally retarded persons to training programs as functions of skills for which their abilities are similar, 2) motor abilities of mentally retarded persons might be assessed by modifying existing tests of basic motor abilities and administering them to such populations, and, 3) ability tests might serve as indicies of development of retarded persons and might eventually provide the basis for assigning them to skill training programs specifically geared to their underlying abilities.

Job skill training

Two studies [29,30] indicated that performances by severely retarded persons in simple job skills might be improved by special training approaches:

Heeboll-Nielsen reported a study[29] in which mentally retarded (N=10, CA $\bar{X}$ 2[illegible]; IQ $\bar{X}$ 30) and normal subjects were given a finger coordination test closely approximating every day factory working conditions. Standardized norms were established for both normal and retarded subjects. Subjects were given 21 days of training that consisted of ten one-minute trials each day. In three weeks retarded subjects improved from an average of 40 percent of scores reached by normal subjects to 70 percent of their scores.

Tizard and Loos [30] administered the Minnesota Spatial Relations Test to eight institutionalized male adult medium-grade imbeciles (IQ 24 to 42; $\bar{X}$ 34.1; CA 19 to 29, $\bar{X}$ 20.4). Subjects who could not complete the test were given special training and retested. All subjects were tested again one month later. Results indicated that all subjects showed rapid improvement after training and considerable transfer of learning from training to testing situations.

Methodology and program approach

Five studies were concerned with determining effective methods to use with severely and profoundly subjects. Findings indicated: 1) no significant difference between utilization of two methods of instructional techniques to improve balance[31], 2) effective use of behavior modification techniques to develop ambulation [32], 3) ineffective use of modeling and berbal instructions on gross motor performances[33], 4) effective use of a group dynamics approach in organizing a physical education program [34], and 5) use of an organized, individualized therapeutic exercise program was more effective than an unorganized free permissive game and exercise program[35].

Purpose of a study by Anooshian[31] was to determine which of two instructional techniques was better for improving balance in severely and profoundly preadolescent and adolescent mentally retarded boys (N=50; CA $\bar{X}$ 13-6; IQ $\bar{X}$ 26.5) from two wards in a state residential facility. Subjects were divided into three groups: 1) regular physical education instruction, 2) conventional instruction in balance activities, and 3) instruction in roller skating. Prior to the start of the experimental period, all subjects were tested for static (number of counts stood on one foot with a maximum of five points) and dynamic (number of steps taken before falling off a walking beam) performances. Treatment period was ten weeks with each subject receiving 40 minutes of instruction a day, five days a week. Analyses of pre and posttest data indicated: 1) no significant differences in posttest scores for static balance among the three groups, 2) a significant difference between control (physical education) and experimental (balance and roller skating) groups in dynamic balance on the posttest, and 3) significant improvement in balance for experimental groups but not for control group. The investigator concluded that both methods of balance instruction enabled subjects to improve balance, but no significant difference was found between these two methods of instruction.

Loynd and Barclay[32] described management of an ambulation deficit apparently resulting from an aberrant reinforcement history. The subject was an eight year old, microcephalic, profoundly mentally retarded girl (MA 1; social quotient on Vineland Social Maturity Scale 17). She achieved independent walking behavior after approximately 84 behavior shaping sessions; various social and psychological concomitants of this behavior were also discussed. Other motor skills were being developed through this same process at time this paper was written. Training sessions also were advantageous in teaching the parents appropriate use of reinforcement to attain desired behavioral outcomes.

A study by Altman, et.al[33]explored relative efficacy of modeling and verbal instructions employed independently with severely retarded males (N=45; CA 6-4 to 15-10; IQ 10 to 50, $\bar{X}$ 27.5) to determine the extent which they were non-imitative. Subjects were divided into three treatment groups: 1) modeling, 2) verbal instructions, and 3) control. All subjects received the experimental treatment in a minimum abstraction room with an adjoining objoining observation room spearated by a full-view one-way mirror. Results indicated differential treatments did not significantly affect behavior of subjects on dependent variable (number of seconds spent in contact with a chair). Lack of significant group differences supported previously reported non-imitative status of severely mentally retarded persons. Methodological implications for modeling as a behavior technique with this population were discussed.

Chigier[34] applied principles of group dynamics to severely retarded persons in an Israeli project. Four peer groups (CA 16 to 32, $\bar{X}$ 20; MA 3 to 8, $\bar{X}$ 5.5) oriented toward becoming work groups and using a group mileu approach were established. Each group had approximately ten members and its own instructor. Three of the groups lived in an institution which was set up as a work colony; members of the fourth group lived at home in an urban area with their parents. An integral part of the total program was planned and systematic physical education for which each group met two mornings a week for four to four-and-a-half hours. This program included a type of cross country hiking/running, calisthenics, mat exercises, apparatus, social games, table tennis, weight lifting, and ladder climbing. Specific recommendations and observations about role of vigorous physical activities, importance of leader/instructor to success and acceptance of the program, adaptations of methods, techniques, and procedures, dispelling of certain myths and misconceptions about severely mentally retarded persons and their participation in physical activities to vocational productivity were discussed in detail.

The Jewish Foundation for Retarded Children[35] conducted a program of planned, organized, individualized therapeutic exercises and activities which was shown to be more effective in meeting needs of a group of young adult and adult trainable mentally handicapped subjects over a program of free permissive games and activities. Experimental group (CA 16 to 34; IQ 11 to 70) consisted of 16 male and ten female day care trainees at the Foundation and five residents from a nearby residential facility. Experimental group participated from September through March in a program consisting of free permissive games and activities. Performances in physical fitness and motor proficiency were assessed by standard UNESCO Test of Physical Achievement (standing broad jump, sit-ups, 50-yard dash, pull-ups, shuttle run, right and left stork stand, flexibility stretcher) and a specially devised physical achievement test consisting of items (vertical jump, sit-ups, 30-yard dash, prone pull-ups, chair shuttle) similar but not identical to UNESCO Battery. Special eye-hand coordination and undress-dressing tests were given the experimental group at the beginning and end of the experimental period. Results of the UNESCO Test showed performances of day care trainees from the Foundation improved significantly in all items; five subjects from the nearby facility who participated with the experimental group for four months had significant improvement in five test items and positive trends in the other two. The control group had no significant improvement in any test item; performances of the control group actually regresssed in two items while moderate but non-significant gains were noted in the others. Females of the experimental group had greater increments of improvement than any group of males, experimental or control. Comparisons of performances on specially developed test of physical achievement reenforced results of the UNESCO Battery in that experimental group had significantly better results than control group on all items. Results of eye-hand and undressing-dressing tests showed that experimental group had improved significantly by the end of the program.

Survey of recreation services

Surveys of recreation services provided severely/profoundly mentally persons in state institutions and activity programs of local associations for retarded citizens revealed inadequate amount of programing, lack of adequately trained personnel, and difficulties in organization and administration of such programs:

Questionnaires[36] were mailed to recreational directors of 35 state institutions for mentally retarded persons in nine mid-western states (Missouri, Illinois, Wisconsin, Minnesota, Iowa, Kansas, Nebraska, South Dakota, and North Dakota) to determine outdoor and indoor recreational activities, group and club opportunities, holiday programs, and types of field trips available to educable, trainable, and custodial residents. Responses (34 or 97.1 percent) indicated a wide variety of recreational activities offered with more programs for educable and trainable persons than for custodial residents.

Cortazzo and Menefre[37] surveyed 111 institutions for mentally retarded persons in the United States to gather information about available recreation programs to learn how recreation programs and types of activities were provided and to gather data about training of personnel in charge of various programs. Results pointed out need to expand programs for severely retarded residents and for an overall evaluation of recreation programs. Survey also indicated a substantial shortage of full-time recreation personnel trained to work with retarded persons in residential facilities.

In 1968, Cortazzo [38] reported a study undertaken to provide comprehensive information about activity programs for severely mentally retarded adults and to offer recommendations for planning future programs. A nationwide survey was made of all member associations of the National Association for Retarded Citizens identified as sponsors of activity programs for adults. A 72 percent return (68 of 94 centers) was achieved. Subjects (N=1, 154; 642 males, 512 females; CA 16 to 62, $\bar{X}$ 24.4; IQ 12 to 60, $\bar{X}$ 42; MA 2 to 8, $\bar{X}$ 5-3) enrolled in programs had been referred from public schools (91 percent); public health nurses (71 percent); physicians (62 percent); public rehabilitation agencies (44 percent); institutions (40 percent); mental health after care and child guidance clinics (21 percent); and family agencies (10 percent). Twenty-nine centers had rejected 267 applicants for a variety of reasons. Counseling was provided at 49 centers (72 percent) for retarded persons and their parents. Training activities existed in such broad categories as self-care-grooming, useful home skills, academics, recreation, community skills, communication, paid work, and crafts. Specific recreation (N=38) activities reported were dances, parties (N=31), basketball (N=27), swimming (N=26), excursion trips (N=25), spectator sports (N=21), hikes (N=12), day camping (N=12), physical education (N=12), residential camping (N=8), and craft activities including paper craft (N=27), woodworking (N=18), weaving (N=15), metal craft (N=13), leather craft (N=12), and ceramics (N=1). While numerous objectives were reported, the majority of centers had goals in the area of mental health (88 percent), training in daily living activities other than work (78 percent), and relief for parents (60 percent); fewer than half (40 percent) listed recreation as one of their objectives. All centers considered training individuals capable of developing work skills for eventual placement in workshop activities as a major objective. In many respects, objectives of these activity programs were similar to those of public schools for trainable mentally retarded children.

Specific recommendations included improving areas of noted weaknesses (evaluation and referral practices, admission criteria, and activites); developing staffing patterns and program materials (guides and training materials), enriching inservice programs, and using minimum operating standards.

Effects of recreational activity

Recreation programs provided in residential settings contributed to total social, emotional, psychological, and attitudinal development of clients in addition to improved awareness and reaction to environment as indicated by two studies. [39, 40]

Value of an intensive recreation program in improving physical, motor, and social aspects of a group of profoundly mentally retarded children was investigated by Hillman[3] Since most recreation activities were carried on within living facilities of subjects, they were divided into three groups on the basis of cottage assignments: Cottage One (N=115; CA Median 34; MA Median 1-9; IQ Median 15); Cottage Two (N=90; CA Median 13; MA Media 1; IQ Median 10); and, Cottage Three (N=90; CA Media 12, MA Median below 1; IQ Median below 10). Program emphasized normal group activities consisting of modifications and adaptations of preschool and kindergarten activities. Reevaluation of groups after four months of this program indicated that, in general, behavior had become more adaptive, and sociability, manipulative skills, and physical coordination had been improved.

Parker[40] explored effectiveness of recreation activities in reducing behavioral management problems and in improving physical condition of severely and profoundly mentally retarded patients in a residential facility. Four areas received major attention: 1) physical fitness as measured by an adaptation of the step test, 2) illness as determined by amount of time patients were sick, 3) ease of managing patients as determined by questionnaires completed by cottage parents, nurses, and recreation personnel, and, 4) weight changes. A stimulus group (N=18; CA $\bar{X}$ 12.5; years institutionalized $\bar{X}$ 2.9) participated in routine recreational activities plus an additional ten hours of supervised recreation each week for four months. A control group (N=18; CA $\bar{X}$ 13.6; years institutionalized $\bar{X}$ 3.3) participated only in the regular recreation program of 15 hours of planned activity each week. It was found that: 1) both groups improved more than control group in all areas, 2) participation in activities led to improvement in physical fitness, 3) extra activity and attention resulted in less illness which in turn reduced necessary treatment and confinement to bed, 4) play in small groups increased awareness of others and of the individual himself, 5) less aggressive behavior occurred, 6) opportunities to play with toys along with instruction in their proper use resulted in subjects making better use of free time, amusing themselves more independently, being less withdrawn, and behaving better, 7) appetites improved, 8) sleeping habits were improved in that subjects went to sleep sooner and slept more soundly, 9) awareness of the environment beyond the cottage increased, 10) cooperation improved, 11) lost cause attitudes of personnel was reduced, and 12) subjects benefitted physically and socially as a result of involvement in recreation and play activities.

SUMMARY

Appropriate and high quality program literature and research data are not readily available to aid physical education, recreation, and related personnel who are urgently demanding assistance due to the current trend increasing number of severely and profoundly mentally retarded persons in their programs. This trend is partially alleviating previous lack of programing for these participants but creating priority needs for:

- Relevant program materials based upon individual social, emotional, mental, psychological, and physical/motor functional levels. Many existing materials are not appropriate for use with severely or profoundly mentally retarded persons; overall quantity of program literature is scanty and information is difficult to obtain. Effective program materials emphasize individual differences and utilize all appropriate members of a rehabilitation-education team.

- Pre and inservice training models to provide foundational (paraprofessional level) and specialized (professional level) knowledge, skills, and competencies for personnel in physical education, recreation, and related areas. Training should be provided in relation to current and projected job roles and responsibilities in different facility/school environments. The majority of personnel are not adequately prepared to program for severely and profoundly mentally retarded participants.

- Research investigations designed to --

    - replicate with severely and profoundly populations studies concerning physical fitness, coordination, cardiorespiratory endurance, muscular strength and endurance, flexibility, balance, and locomotor skills previously conducted with mild to moderately retarded populations. In addition, studies related to performance levels and understanding of complex motor tasks should be replicated concerning relationships between cognitive, mental, or intellectual functions and motor ability. Hardly any data were available in this research area except for studies which showed delayed progression or poor physical/motor growth and development as degree of mental retardation became more extreme.

- determine contributions or values of comprehensive programs in or activity components of physical education, recreation, and/or related areas using severely and/or profoundly mentally retarded subjects. The few studies that had been acomplished revealed some support that such programs or activities had value in improving motor/physical fitness skills, awareness and reaction to environment, movement behavior, and social maturity.

- determine effective environments which will stimulate increased movement behavior on the part of the severely or profoundly mentally retarded person. Several studies indicated that environmental stimuli which aroused and motivated a subject increased movement behavior.

- establish evaluative criteria to determine motor skill progressions. Little information was available concerning this developmental area except for implications from normal growth and development progression scales and studies carried out with subjects of higher intellectual function. Previous studies evaluated motor performances on an individual basis or by use of modified growth and development scales and/or motor test items initially developed for persons with normal or mild to moderate levels of intelligence.

- determine training approaches that are feasible to develop specific job skills in severely mentally retarded persons who are capable of semi-independent employment. Several studies indicated improved job skills following special training programs.

- determine effective methodology and program approaches. There was some indication that behavior modification techniques and group dynamics approaches were effective in programing for severely and profoundly mentally retarded persons. In addition, a well organized, individualized approach was more effective than an unorganized program situation.

- conduct surveys of recreation and physical education services provided severely and profoundly mentally retarded individuals in public and private treatment and direct care facilities, continuum care settings, community programs and public/private school programs. A little information was available concerning the recreational setting but no information was obtained about what was going on in public school situations as a result of right to education legislation, litigation, and special education mandates.

Consider feasibility or efficacy of placing more emphasis on demonstration projects and empirical approaches that have been proved successful in terms of programing and dissemination. Indications are that these types of projects/approaches provide excellent assistance and information that practitioners can use due to the individual differences of the severely and profoundly mentally retarded participants in their programs.

Research and Demonstration

High Level

- Replicate with severely and profoundly populations studies concerning physical fitness, coordination, cardiorespiratory endurance, muscular strength and endurance, flexibility, balance, and locomotor skills previously conducted with mild to moderately retarded populations. In addition, studies related to performance levels and understanding of complex motor tasks should be replicated concerning relationships between cognitive, mental, or intellectual functions and motor ability.

- Determine contributions or values of comprehensive programs in or activity components of physical education, recreation, and/or related areas using severely and/or profoundly mentally retarded subjects.

- Determine effective environments which will stimulate increased movement behavior on the part of the severely or profoundly mentally retarded person.

- Establish evaluative criteria to determine motor skill progressions.

- Determine training approaches that are feasible to develop specific job skills in severely mentally retarded persons who are capable of semi-independent employment.

- Determine effective methodology and program approaches.

- Conduct surveys of recreation and physical education services provided severely and profoundly mentally retarded individuals in public and private treatment and direct care facilities, continuum care settings, community programs and public/private school programs.

- Consider feasibility or efficacy of placing more emphasis on demonstration projects and empirical approaches that have been proven successful in terms of programing and dissemination.

Personnel Preparation

High Level

- Provide pre and inservice training models to provide foundational (paraprofessional level) and specialized (professional level) knowledge, skills, and competencies for personnel in physical education, recreation, and related areas. Training should be provided in relation to current and projected job roles and responsibilities in different facility/school environments.

Media Services

High Level

- Develop and disseminate relevant program materials based upon individual social, emotional, mental, psychological, and physical/motor functional levels.

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PHYSICAL EDUCATION AND RECREATION FOR INDIVIDUALS WITH MULTIPLE HANDICAPPING CONDITIONS*

State of the Art

During recent years, there has been an increase in the number of multiple handicapped children with a resulting increase in the number of programs developed or expanded for individuals with such conditions. Because of this increased interest numerous requests were received by the Information and Research Utilization Center in Physical Education and Recreation for the Handicapped (IRUC) for information on physical education and recreation programs, methods, and activities for multiple handicapped individuals. Accordingly, an effort was made to develop a publication for program information, references, audiovisual aids, and resources related to this topic. Information was gathered and analyzed from related literature, bibliographies, project reports, books, guides, manuals, and data retrieval system print-outs. In addition, an extensive mailing for information was made in September 1973, to personnel, organizations, schools, and agencies at local, state, and national levels.

Unfortunately, overall response to this search to see what's going on in physical education and recreation for multiple handicapped persons was minimal in quantity and appropriateness. Little printed matter was available on this specific subject; however, some literature was available on 1) conditions and education and training programs, 2) references for programing for persons with single conditions which were applicable for multiple conditions, and 3) education/training program descriptions which included physical education or recreation activities.

Analyses of information obtained revealed:

Different definitions of the term multiple handicapped. However, the underlying concept apparent in all definitions is that two or more handicapped conditions occur in one individual that are severe enough to warrant special programing or assignment of a label for each condition. For example, a child with severe visual and auditory problems is usually labeled deaf-blind. On the other hand, if this child's visual problem is severe and the auditory problem mild, he probably would be labeled blind.

Complex problems presented by multiple conditions due to interaction of conditions. Personnel cannot simply use traditional methods or program approaches for a single condition such as for visual impairments, mental retardation, or accoustic impairments. In other words, it is a situation whereby the whole is greater than the sum of the parts.

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*An AAHPER publication, Physical Education and Recreation for Individuals with Multiple Handicapping Conditions contains a brief analysis of literature, abstracts, and information on physical education and recreation for individuals with multiple handicapping conditions. Sections are presented that include examples of related programs, references, resource contacts, and audiovisual aids. Available from AAHPER Publications Sales, (1201 16th St., N.W., Washington, D.C. 20036), 1975. $2.00.

Semantic problems concerning terms denoting multiple conditions usually depend upon each writer's interest or affiliation with a particular professional group or organization. The terms cerebral palsied, severely handicapped, severely disabled, and multiple handicapped are sometimes used synonymously. For instance, some publications concerning cerebral palsied individuals are written using the term multiple handicapped rather than cerebral palsied. In addition, other spellings of the term such as multi-handicapped and multiply handicapped are often used and add to the confusion.

Each of the multiple handicapping conditions quite unique and difficulty to generalize from one condition to another. For example, the conditions deaf-blind, blind-retarded, and cerebral palsied are quite different in nature and require different program approaches and methods. It is for this reason that more emphasis needs to be placed upon these specific conditions rather than the general term multiple handicapped.

Certain multiple conditions more prevalent and written about more than others. Two of these conditions are deaf-blind and cerebral palsied.

The rubella epidemic around 1964 resulted in increased multiple handicapping conditions in children born at that time. Visual and auditory (deaf-blind) conditions were especially prevalent. Future program efforts should take these children into consideration as they grow older and are in need of physical education and recreation activities.

Federal funding of projects and programs increased activity and resultant literature in certain categories of multiple conditions. Two examples of funding by the Bureau of Education for the Handicapped (U. S. Office of Education, H.E.W.) are Regional Deaf Blind Centers (Dr. Robert Dantona, Coordinator, Centers and Services for Deaf-Blind Children, Bureau of Education for the Handicapped, U.S. Office of Education, Department of Health, Education, and Welfare, 7th and D Streets, S. W., Washington, D. C., 20202) and the National Institute on Program Development and Training in Recreation for Deaf-Blind Children, Youth and Adults (Dr. John A. Nesbitt, Project Director, University of Iowa, Iowa City, Iowa, 52242). In addition, some programs for mentally retarded and cerebral palsied individuals are partially supported by Developmental Disability funds (Social Rehabilitation Services Administration, H.E.W.).

Behavior modification as one of the most prevalent techniques used and written about for working with multiple handicapped children. For example, behavior modification for the deaf-blind was the primary topic of a 1972 workshop held by the Michigan School for the Blind sponsored by the Bureau of Education for the Handicapped and the Michigan State Department of Education.

The limited articles published in the area of physical education and recreation for multiple handicapped persons were specific in nature and only a few provided a comprehensive program approach for the total subject. For instance, more articles were available on a certain aspect of the total program such as swimming or camping for the deaf-blind person than were available for the total physical education or recreation program.

Several resource contacts offer substantial information such as bibliographies and publications on the subject. Several of these contacts include Information Center for Handicapped and Gifted Children, Council for Exceptional Children, 1920 Association Drive, Reston, Virginia, 22091; Early Childhood Education-ERIC Clearinghouse, University of Illinois, Urbana, Illinois, 61801; United Cerebral Palsy Association, Inc., 66 East 34th Street, New York, New York, 10016; and Perkins School for the Blind, 175 North Beacon Street, Watertown, Massachusetts, 02172.

Many on-going programs for multiple handicapped participants have had little or no literature published about their efforts. For this reason, information obtained from sources such as limited distribution guides, project reports, and unpublished materials need to be made available to all related personnel.

At the current time, there is not a large body of knowledge in the subject area of physical education and recreation for multiple handicapped persons.

Summary. Because of inadequate information and numerous requests for this type of information, there is an urgent need for additional program information for practitioners who provide physical education and recreation programs for multiple handicapped participants. In addition, there is a priority need for inservice and preservice training for these personnel to aid them in programing. Specific priority needs include:

PRIORITY NEEDS

Research and Demonstration

High Level

- Determine effective methods and techniques for programing and/or modifying activities for specific handicapping conditions such as for deaf-blind, blind-retarded, or cerebral palsied persons.

- Disseminate at local, state, regional, and national levels data developed by the National Institute on Program Development and Training in Recreation for Deaf-Blind Children, Youth and Adults.

- Identify and field test curriculum or program models concerned with physical education, recreation or related areas for participants with a specific handicapping condition such as deaf-blindness or cerebral palsy.

- Determine effects of active participation in various motor, movement, physical, and recreational activities upon physiological functions, emotional stability, social development, and health status of individuals/groups with different combinations of multiple conditions.

- Determine personality characteristics, professional training, and other personal traits of individuals, activity specialists and teams of personnel effective in working with individuals/groups with different combinations of multiple conditions.

Personnel Preparation

High Level

Provide inservice and preservice seminars, symposia, orientation sessions, conferences, workshops, and other training materials and opportunities that:

- Offer skills, knowledges, and competencies for programing for multiple handicapped participants.

- Emphasize one or more specific handicapping conditions such as deaf-blindness or cerebral palsy.

- Apply methods and techniques which are effective for specific conditions such as for deaf-blindness or cerebral palsied persons.

- Disseminate information and materials which have been developed by resources such as Information Center for Handicapped and Gifted Children; Early Childhood Education - ERIC Clearninghouse; United Cerebral Palsy Associations, Inc.; Perkins School for the Blind; National Institute on Program Development and Training in Recreation for Deaf-Blind Children, Youth and Adults; and Regional Centers for Services to Deaf-Blind Children, Youth and Adults.

PROGRAM IMPLICATIONS FOR CHILDREN WITH ORTHOPEDIC AND RELATED IMPAIRMENTS

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State of the Art

The word orthopedic pertains to correction of deformity or diseases and defects of bones and muscles of the body. Most orthopedic impairments are caused by trauma, congential disorders, osteochondrosis (inflammation of bone and cartilage), and infection. The degree of involvement ranges from minimal affections to severe crippling which forces an individual to remain at home. Individuals with orthopedic impairments often need special appliances--wheelchairs, braces, crutches, and prosthetic devices to aid their mobility.

In considering the magnitude of orthopedic impairments, it is impossible to cover all the conditions commonly found in children and young adults. The very nature of orthopedic impairments creates an inexhaustible source of material and numerous disabilities. Specific orthopedic and related impairments included in these State of the Art statements are: spina bifida, Legg-Perthes Disease, slipped femoral epiphysis, postural abnormalities, progressive muscular dystrophy, amputations, cerebral palsy, and hemiplegic cerebral palsy in children. Documented information consists of accurate up-to-date from authoritative sources. Needless to say, program implications and goals considered realistic and attainable now are bound to change in the future because of changes in disease patterns and treatment concepts.

Spina Bifida

Description

Spina Bifida is a congenital anomaly characterized by a developmental defect in one or more vertebral arches through which the contents of the spinal canal may protrude. There are three types: (1) spina bifida occulta, in which the spinal cord and meninges are normal, the defect being only of the vertegrae; (2) meningocele, in which the meninges protrude through the opening in the spinal canal; and (3) myelomeningocele, in which both the spinal cord and the meninges protrude through the defect in the bony rings of the spinal canal. Further discussion will be limited to this type since it is the most common.

Children with myelomeningocele may have many physical problems connected with the defect. The primary difficulties are hydrocephalus (abnormal enlargement of the head), loss of bladder and sphincter control and varying degrees of decreased sensation and motor activity of the lower extremities. Complications of the primary disabilities include eye muscle imbalance, blocked shunts, infections of the blood stream and/or of the meninges, infections of the urinary track, deformities of the lower extremities, fractures, trophic ulcers, and obesity. Mental retardation may also occur.[1]

Incidence

Myelomeningocele is one of the most common birth defects. Statistics show an incidence of 1 to 3 cases in every 1,000 births.[2] With the declining incidence of poliomyelitis and tuberculosis bone and joint disease, myelomeningocele now stands second only in importance to cerebral palsy as a chronic locomotor disability in childhood.[3]

Treatment

Surgical repair of the myelomeningocele is done by a neurosurgeon. Neurosurgeons at one time did not feel optimistic about operating on these children. However, better technical facilities are now available and most of them feel that it is advisable to do a surgical procedure to bury the defective spinal cord below the skin surface. Hydrocephalus is treated with a ventriculoatrial shunting and a pressure valve.[4] Incontinence can be controlled by the Crede procedure (pressing firmly at the lower abdomen) or by surgical diversion. A urinary diversion surgical procedure presents kidney damage and provides improved hygiene. Since the degree of involvement varies, a child may have enough muscle power to walk without assistance, or he may require braces to support weak muscles. Some children can walk without braces using only crutches for support. The more severely involved child will need to use a wheelchair.

Program Implications

Attendance at a regular school should be encouraged if the child has intellectual skills. It is important that he be socially acceptable concerning control of urine and feces. The normal child who is five to eight years of age plays with spreading scope and movement. Unfortunately, due to lack of motor dexterity, the myelomeningocele child cannot participate in many childhood play activities such as climbing, jumping, tumbling, playing tag and hopscotch. However, this is the age period when the greatest percentage of children with myelomeningocele walk. They especially need to be accepted by their peers and to belong to a group.

Physical activities that develop as much strength as possible in the shoulders and arms should be encouraged. Children with a lesion in the L4-L5 level have motor power present for hip flexion and hip adduction, consequently should be encouraged to perform unilateral motor tasks such as throwing balls and striking objects from a standing position. Due to varying degrees of involvement, some children will need to use one crutch for support while freeing their dominant upper-extremity for propulsion. This will help develop nonlocomotor skills (body movements done in place) because it forces them to respond to equilibrium reactions and postural changes. Low organization games to enhance eye-hand coordination and motor plannng should be encouraged. Beanbags, yarn balls, and playground balls are important tools for experimentation. Gym scooters make excellent devices for kinesthetic awareness providing progression tasks are gradual and consistent. The child can propel the scooter with his hands while his body is in a supine position. Children in wheelchairs can participate in "running" activities in their wheelchairs. Relays are good for fitness and social objectives and the wheelchair-bound player should be encouraged to play. The distance can be modified to equalize competition. One suggestion is to have the wheelchair-bound player start first, but shorten the distance between him and the second runner. After this modification, normal play can resume and runners can complete action until a point is scored.

Elementary school physical education teachers should assist classroom teachers in analyzing the perceptual-motor capabilities of myelomeningocele children. This group of children are often able to participate in group activities and have impressive vocabularies; however, a high percentage are beset with perceptual inadequacies, particularly laterality and directionality problems. Many have difficulty following two-part directions and are unable to organize verbal directions and memorize concepts. Often, because of specific inborn or environmental characteristics, progress is uneven, For example, a child often develops cognitive abilities in a normal way, but experience problems in motor behavior; or he may have difficulties with perception, while progressing nicely in the verbal area.

More research needs to be done on the perceptual skills of children having myelomeningocele who are either nonhydrocephalic or hydrocephalic. Gressang[5] studied 29 children, all of whom had the diagnosis of myelomeningocele to determine whether there is a significant difference in performance on a series of perceptual-motor tests between nonhydrocephalic and hydrocephlic children. Twenty subjects had hydrocephalus and required surgical shunting procedures. The mean age was 5 years 10 months. Participants had a score of borderline (70 I.Q.) or above on psychometric testing or a developmental quotient of 80 or above. The hydrocephalic children scored higher on the four respective tests.

Bunch et al. report, "Gym classes require improvisation so the child is competing in activities that are equally challenging for him at his level of ability. Swimming is a good sport as it requires primarily upper extremity dexterity and the water acts as a bouyant aid for paralyzed legs. Being a team manager, playing an instrument, and developing craft skills all provide the child with a degree of accomplishment. The older preadolescent becomes interested in making games. The child with a myelomeningocele should be able to compete with his friends for the primary factor will be his personality and his ability to get along with others."[6]

By secondary school age, most myelomeningocele children are independent in their activities of daily living. Unfortunately, many stop ambulating due to the amount of energy expenditure it takes to lift their added body weight from one place to another. Walking with braces and crutches can be a laborious procedure, thus many individuals prefer to use a wheelchair. Using a wheelchair during participation in sports and games enables the person to achieve a certain amount of independence and prevents excessive fatigue. Sports such as archery, table tennis and weight lifting that promote active use of the upper-extremities should be encouraged. Therapists and instructors must bear in mind that the skin below the lesion is insensitive. Ducubitis ulcers (pressure sores) over the ischial tuberosities and the heels are common, particularly in children confined to wheelchairs. Daily skin checks should be encouraged to prevent this problem.

Swimming is an excellent activiity. The buoyancy of the water often permits a person with physical disabilities to acquire skills he could not do without that kind of free support. Unfortunately, there are misconceptions about using swimming as a recreational outlet for myelomeningocele children because of their inability to control bladder and bowels. For example, many managers of public swimming pools do not allow myelomeningocele children to use their facilities because of bowel and bladder incontinence. This kind of social rejection further removes the child from the mainstream of life with unimpaired members of this age group. Actually, an individual can swim while wearing his urinary appliance and belt, providing the bag is emptied before going into the pool. In fact, the appliance and bag are sealed to be fluid proof--to urine from the inside or water from the outside. For extra security without a belt, a water proof spray adhesive (Hollister Medical Adhesive) can be used to secure the appliance in place. Bathing suits should be carefully selected because an appliance can be noticed through a thin nylon suit. For cosmetic reasons, it is important to wear bathing suits that hold the appliance firmly and invisibly. Generally, males prefer to wear boxer trunks with a broad belted athletic supporter. Females usually prefer one piece suits with a light panty girdle underneath.

Swimming is important for physiological reasons. A number of children, particularly those confined to wheelchairs, become obese because of inactivity. Swimming promotes action, movement, and change of position which is beneficial for establishing good exercise and weight control habits. Extreme care should be taken in regards to weight control because excessive skinfolds make it difficult to secure an urostomy appliance for any length of time. In addition the individual has a very difficult time wearing the appliance comfortably. Swimming, of course, is also good for developing social skills. The sport is often the only large muscle activity that myelomeningocele children can participate in with their normal contemporaries and feel a sense of physical accomplishment.

Legg-Perthes Disease

Description

Legg-Perthes disease is a form of osteochondrosis which affects the growth center (epiphysis) in the proximal end of the femur. The condition causes fragmentation and degeneration to the head of the femur followed in time by a slow regeneration and a subsequent return to normal bone hardness and strength. The length of time from the onset of fragmentation and degeneration to completion of regeneration may be from one to three years during which time proper diagnosis and treatment are necessary for full recovery. If the child is not treated during this time and continues to bear weight on the affected limb, the head of the femur may regenerate in a flat, irregular or enlarged shape permanently affecting mobility and leading to early degenerative arthritis.

An intermittent limp, pain in the affected hip, though minimal at times, and the possibility of referred pain in the thigh and knee are among the most common symptoms. In time, there will be limitation of external rotation and abduction, atrophy of the thigh and calf and shortening of the leg.

The success of treament of these children is dependent upon three factors: 1) the age of the child, 2) the degree of involvement of the femoral head, and 3) stage of condition at beginning of the treatment. The younger the child and the earlier the child is seen in the course of the disease, the better the prognosis. Since we see children when they are active, we are in a position to observe changes in movement patterns and note any of the symptoms which have been mentioned. Early treatment is important and may be an aid in the recovery.

Incidence

Legg-Perthes disease occurs in children between the ages of 3-12 years old, though practically all the cases reported are of children from 4-8 years old.[7]

The condition is more prevalent in boys; however, when occuring in girls, the prognosis is worse resulting in need for more treatment. Fortunately, in about 90 percent of the cases only one hip is affected.

The British Columbia study[8] indicated when the incidence was computed at peak incidence rate, it was found that the ratio was 24.5 per 100,000 males and 4.3 per 100,000 for females.

Treatment

The three different treatment modalities that are presently used throughout the United States are: (1) non-weight bearing, (2) weight-bearing, and (3) surgical correction.

Traditional management through non-weight bearing is accomplished by keeping weight off the affected femoral head. When ambulation has been allowed, ischial weight bearing braces or a Snyder sling with crutches have been used. The medical fraternity has proven that this form of treatment is ineffective because the femoral head is not contained within the acetabulum (cup-shaped cavity in the hip bone in which the head of the femur fits).

Many orthopedic specialists no longer feel that weight bearing on the affected limb is dangerous, as long as the leg is abducted so that the femoral head is covered. If coverage is achieved then development of the ossification center should progress under normal pathways. If coverage is not achieved then flattening of the epiphysis occurs and an incongruent joint is the result. Based on the range of movement possible, the bracing may be divided into three classes: (1) abduction braces and casts permitting no knee flexion and necessitating crutches, (2) abduction braces permitting knee flexion and utilizing crutches, and (3) trilateral hip abduction brace (Tachdjian brace). Two of the more common abduction appliances are the Toronto Legg-Perthes Brace[9] and the Petrie abduction plaster casts.

In more serious cases in which total head involvement is diagnosed, the need for surgical intervention is needed to complete coverage of the affected femoral head by lengthening the acetabulum. Many physicians feel that osteotomies (surgical cutting of the bone) have not been well enough defined for it to be used routinely in the treatment of Legg-Perthes disease. However, Kopits states, "I believe that the most conservative way of managing a six or seven year old child with Perthes disease is by operating on him and putting him back in the activities of normal life in about ten weeks." [10] Doctor Kopits uses osteotomies (femoral varus subtrochanteric) almost as an exclusive way of treatment.

As soon as the osteotomy has healed, some surgeons allow the child to bear weight on the affected hip and to return to normal unrestricted life, limited only by vigorous contact sports.

Program Implications

Children will be confined to a hospital for a brief period of time if surgical correction is the choice of treatment. During the immediate post-surgery period, a therapeutic recreation specialist should introduce a number of activities that challenge the patient's visual and tactile senses. It should be remembered that many children with Legg-Perthes disease were once active and excelled in gross movements. The patient will have movement limitations because his affected limb or limbs will be fixed in a cast to immobilize one or both lower extremities to the trunk. Activities that stress spatial relationships and pressure changes through movements of the upper limbs are recommended. Suggested activities include ball throwing, table games to enhance cognitive development, and miniature tether ball. Two important goals for the therapeutic recreation specialist will be to promote a good mental attitude and provide an outlet for surplus energies.

The child with Legg-Perthes disease will be able to participate in a wide selection of games and sports as soon as he returns to regular school. Suitable adaptations should be made so that the restrictions imposed by the handicap are minimized. The adapted or recreational phase of the program is to aid the child in participating in activities within his range of motion during treatment and providing him with opportunities to learn activities which will permit him to be a part of his peer group in physical activities. The child will no doubt have more success in closed skill activities in which he will not have to react to changing external environments and can attend to developing as good a pattern of movement as possible. One such adaptation is permitting the child to strike a stationary ball instead of a moving one in games and team sports. Other times, open skills can be modified somewhat by changing the speed in which the child must respond. Permitting the child to catch or hit the ball on the second or third bounce instead of the first may be the only modification needed in a low level game or activity. With the heavy braces and crutches, open skills which would call for the child to adjust his movement patterns to fit an unpredictable series of environments would certainly limit his success in most activities. Some traditionally open skills may be adapted, however, to be more closed, thereby giving the child greater chance for success. Bowling (from a stationary position) archery and basketball foul shooting are examples of closed skills.

The average age in which Legg-Perthes disease attacks children and the length of treament time point to special needs of these children and subsequent programing necessary. The onset of this disease in eighty percent of the children occurs between the ages of four and eight years old. These are crucial years in terms of motor development of the child. Early childhood from two to six or seven years, (particularly in boys), is a time in which normal children are learning to run, climb, jump, hop, skip, kick, throw, catch and strike. In general, they develop these motor skills according to laws of physiological maturation with patterns progressing from simple arm and leg movements to highly integrated total body coordination.[11] For a child with severe movement limitations over a long period of time, such as with treatment of Legg-Perthes there will obviously be a developmental lag in basic motor skills. Activities must be planned which will diminish this lag as much as possible. Though the child will be unable to ambulate well enough in braces to run, hop and jump, a number of skills can be developed from a sitting position. Throwing, catching, and striking can be accomplished from a sitting position. Throwing, catching, and striking can be accomplished from a sitting position with instruction utilizing the principles such as summation of forces and absorption of impact occuring from the waist up. When correct movement patterns are formed from this position, it will not be difficult to transfer this to the standing position. When one cannot climb vertically-horizontal ropes and scooters can be used to climb horizontally.

The task of physical education is to teach the students how to make changes within themselves. The only limitations to the student's activities should be those which are imposed upon him because of his anatomical defect. Most physicians tend to support the principal that children can participate in any activity while in abduction braces and casts, providing they do not aggravate the condition. Most accidents occur when the child challenges his capacity for speed of movement. Students wearing abduction appliances cannot change direction or otherwise adjust position speedily. Thus, the physical educator should not introduce activities that require speed and agility.

In some parts of the country, one might still see a child using a sling and crutches in physical education class although this form of treatment is slowly giving way to newer methods. If used effectively both hands must be confined to crutches. The affected side must not bear weight causing a serious curtailment in activities during this time. Since one foot is free for use, a chair, with coaster wheels can be used which will allow the child to push himself about with the unaffected lower limb thereby freeing his hands for activities and offering considerable mobility.

In comparison with the other weight-bearing appliances, the trilateral hip abduction (Tachdjian) brace permits the greatest freedom of movement. One question that is often raised by therapeutic recreation specialists and physical educators deals with the effect of torque about the hip joint while wearing the brace in physical activities that require abrupt changes in direction and rapid transfer of weight. Griffin states that, "Being active with the Tachdjian brace, playing tennis, and other similar things will not have any dilatory effect on the femoral head as long as the head is in the acetabulum. There has been no report of a fracture of the proximal femur in children wearing the Tachdjian brace."[12] McCullough reports, "The brace, although it is supposedly a non-weight bearing appliance, does certainly not competely unload the hip, but so long as the hip is maintained in abduction, some forces on the hips are acceptable."[13] Some atrophy of the affected limb will occur but with such freedom of movement the child will have less general atrophy to his body at the conclusion of treatment.

The child who returns to school after surgical correction will have activity restrictions. A modified program is usually allowed for the first six months. During this period, vigorous gymnastics and tumbling, contact and combative sports are not recommended. A program of corrective exercises and activities to strengthen the quadriceps and hamstrings is indicated. Swimming can be introduced at this time. Therapeutic exercises in the pool can be used to increase joint range of motion and prevent muscle atrophy. In addition, the buoyancy of the water reduces the body weight from the avascular femoral head. Bunch[14] reported that six months after surgery, the child is sually free to engage in full vigorous activity, including running and bicycling.

Another important facet of the program needing attention are activities which promote body image. Gnerally about the time a child is seven years old he should have a fairly accurate perception of the relationship of his body parts; the relationship of his body to external objects; and position of his body in relation to gravitational forces.[15] It is generally conceded that this perception of spatial patterns, estimation of speed, distance and depth and kinesthetic awareness is essential for acquisition of higher motor skills. One of the most prevalent ways a child learns this is through his movement experiences during early childhood. A child undergoing Legg-Perthes treatment may have a developmental lag in this area. The inclusion of a significant amount of time spent on movement exploration for these children is warranted. It helps the child explore himself in his environment and learn his movement capacities both during treatment and post-treatment phases. This phase of the program helps this child alsl since there are no competitive pressures as with other activities.

One of the main objectives of treatment of Legg-Perthes disease is to prevent prolonged confinement in bed, in an institution, or at home by allowing him to be ambulatory and to perform activities in as nearly normal a manner as possible.

Slipped Femoral Epiphysis

Description

In the disorder of slipped femoral epiphysis (adolescent coxa vera), the epiphysis either gradually, or suddenly, slips downward and backward in relation to the neck of the femur. The cause in unknown, however, it is likely that trauma, angle of the epiphyseal plate, plus hormonal abnormaliities are important factors. Slipping of the upper femoral epiphysis often occurs more frequently in two types of children: 1) Frohlick type of adolescent with a female distribution of fat and sexual underdevelopment and 2) very tall, thin rapidly growing adolescent. Most authorities think that the slips occur during the period of abnormal growth spurt at adolescence and represents relatively more growth hormone than a sex hormone.

Early symptoms arise when slight discomfort appears about the groin, usually after activity. Stiffness and a slight limp may also be present. As the slip progresses, there develops a Trendelenburg type of gait (the patient's trunk leans toward the affected side as weight is borne on the affected limb), the lower limb becomes externally rotated with limited flexion, internal rotation and abduction. I cannot overemphasize that the pain, as in Legg-Perthes disease, may be minimal, and is frequently in the thigh and knee. Burrows[16] commented on the delay in treatment that so often occurs in patients with slipped femoral epiphysis either because the pain has been dismissed as growing pain or rheumatism or because of failure to detect radiological changes.

Incidence

Slipping of the upper femoral epiphysis is most likely to develop in older children and adolescents; from the age of nine years to the end of growth and it is more common in boys than girls. There is approximately a 30 percent chance of the second hip becoming involved subsequently. The prognosis is worse in blacks and bilaterally is 50 percent.

Estimates of incidence rates in Connecticut were 7.79 per 100,000 for black males, 6.68 for black females, 4.74 for white males, and 1.64 for white females.[17]

Treatment

Conservative treatment such as bed rest and traction* to prevent further displacement is not effective. In cases where the slip is slight and position acceptable, internal fixation devices (pins) are inserted across the epiphyseal plate to help correct displacement and maintain correction until bony union between neck and epiphysis has taken place. To provide freedom from weight bearing, the child is allowed to be ambulatory with crutches and three-point gait with toe touch on the affected limb. Full weight bearing is generally allowed in three to four months. General follow-up with repeated clinical and radiological examination of the opposite hip is essential until the epiphyseal plate on the other side is closed. Chronic and severe slips are much different and will not be discussed.

Program Implications

Physical education teachers and therapeutic recreation specialists are concerned with the extent of physical activity during the presence of internal fixation devices such as Knowles pins. It has been postulated that there is some weakening of the bone due to pins, however, very little research has been documented in this specific area. There have been reported cases where fractures of the femur have occurred below metal fixation devices. On the other hand, many of these pins become enclosed in bone and the bone could be actually stronger than normal. Southwick [18] states that if x-rays show no evidence of reaction or dissolution of bone around the metal and show essentially normal bone mineralization and normal appearing thickness to the cortex of the bone and over three months have elapsed since the placement of the pins, it would seem to be reasonable to allow children to carry on normal physical education activities, including contact sports. The child should be trained and conditioned gradually so that he can carry out sport activities and should be checked to see if he has reasonable coordination. Improved coordination and skills as objectives should not necessarily be considered as an end but a means to another end, namely the ability to participate in physical activity. If there were evidence of mineralization or resolution around the pins, however, it would be unsafe then to allow such a child to carry out sport activities.

The most important part of an adapted physical education program will take place during the three month post-operative period at which time the student is required to walk with the aid of crutches. Therapeutic exercises to strengthen the quadriceps and hamstring muscle groups are important, and later isometrics can be used to accomplish the same purpose. It is best, however, to coordinate the exercise protocol with the student's attending physician and physical therapist before staring a program. During this period, the child should be encouraged to participate in safe, non-strenuous activities. Popular examples of mild participant sports are weight lifting (without weight bearing), shuffleboard, archery and horseshoes.

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*Traction is sometimes used for acute and subacute slips greater than 1/3 the diameter of the femoral head, to accomplish reduction prior to pinning.

Vigorous play and group competition provide satisfying experiences for adolescent children. Unfortunately, during the period of non-weight bearing, children limited by slipped femoral epiphysis must curtail many spontaneous activities such as running and jumping. Popular group games that require excessive use of the lower limbs such as touch football, volleyball, dodge ball and kickball must be omitted. Sports that require speed of movement such as tennis, soccer and basketball should obviously be avoided. Although slipped femoral epiphysis is not a serious condition, it is very easy for an adolescent to regress in his interpersonal relations. Peer prestige is often affected when an adolescent is required to walk with the aid of crutches. Fortunately, slipped femoral epiphysis is not a condition of prolonged immobility, and resumption of most physical education activities can begin after the three month precautionary period. The physical education teacher can reinforce this fact during the recovery stage when the student is performing therapeutic exercises. The student needs to interpret the need to reach maximum physical potential, but under established safety controls to prevent further trauma to the hip joint area.

Some physicians have reservations about the shearing effect on the epiphyseal plate after placement of internal fixation devices, particularly if certain activities require violent exertion and the impact of landing is on the hip-joint. Dangers of falling result largely from impact and obese children (common physical characteristic of slipped femoral epiphysis), because of their greater mass without equivalent agility or strength, are injured more seriously by falls. Thus, every physical educator should carefully evaluate the feelings of the physician before allowing the student to participate in activities where the hip has to absorb shock, and where protective equipment is limited. The hip-joint is exposed to a gravitational load in activities such as trampolining, wrestling, judo and pole vaulting. High jumping, for example, often involves twisting one leg and rotating the body in space thus the shock force to the hip-joint is considerable after contact is made with the surface.

Every physical education teacher and therapeutic recreation specialist should be aware of the association between males with Frohlich-type builds and slipped femoral epiphysis. A boy with underdeveloped sexual characteristics who is obese is often not athletically inclined. He generally has trouble competing with his peer group, and because of this will tend to withdraw from such activity. There is often psychic scarring that occurs from poor self-image concepts. It is well recognized that any child after puberty who is fat and manifests underdevelopment of the genitals and in whom there is persistent pain in the hip or a limp should be assumed to have slipped femoral epiphysis until it is disproven. In such cases, the teacher or therapist can be of enormous help to the student by focusing the need for good weight control habits. If the sheer strength of the epiphysis is reduced, and there is more weight control placed on the hip-joint, there will be more of a tendency for slippage. The teacher can assist the physician by encouraging good exercise habits and monitoring a weight control program for a student with unilateral slipping since the opposite hip is often affected at a later date.

Some physicians feel that three months following removal of Knowles pins would be time enough to restore the strength of the neck of the femur if the x-ray appears to have evidence of large defects where the pins were placed. Others feel that six months are necessary to restore full strength to the femur. Again, it would be important for a child of this sort to have adequate training prior to carrying out vigorous sports activities. The question about activities would have to be decided somewhat on the assumption that these children are in a growing age group and that their remodeling is taking place rapidly.

Postural Abnormalities

Description

Postural deviations are classified as functional or structural. For example, functional scoliosis is a curve not associated with deformity and soft-tissue contracture, one which can be corrected voluntarily. A better designation is "nonrigid scoliosis", because it implies that the maximal correctibility is possible. Exercises directed toward specific muscle groups will reduce the disorder. A structural deformity is a permanent condition associated with a change in the bone structure. When the nonrigid curve is allowed to persist, deformities of the vertebrae and the ribs and contracture of soft-tissue eventuates in the "rigid" or "structural curve". Further discussion will be limited to structural deviation.

Rapid physical and emotional growth during adolescence makes children particularly vulnerable to certain illnesses which affect the developmental process. Some of these relate to the development of the spine and result in such deformities as idiopathic scoliosis (a lateral curvature of the spine), kyphosis (an abnormal convexity or backward curvature of the spine), and Scheuermann's disease (a degeneration of one or more of the growth or ossification centers in the vertebrae, followed by regeneration or recalcification), otherwise known as juvenile kyphosis or vertebral osteochondritis. Unfortunately, these deformities are rarely identified in their initial stages; for despite the fact that good posture is basic to healthy growth, little attention is given to it in most physical examinations and education programs.

Subjective complaints are absent or minimal in childhood. The initial complaint is usually poor posture. Backache, back stiffness and back weakness are occasional complaints, but these problems are more likely with advancing age, particularly after heavy and prolonged work.

The diagnosis is made on physical examination. An X-ray picture of the entire spine is taken with the patient in a standing position. Roentgenograms may also be taken with the patient bending as far as possible to the right and to the left. If the curve is a mild one, observation may be the only treatment necessary.[19]

Incidence

The absolute incidence of structural postural abnormalities in the general population is not known. However, adolescent idiopathic occurs predominately in females in a ratio of 9 to 1 usually between the ages of 12 and 16. Scheuermann's Disease is equally common in both sexes. The age of clinical manifestation is generally from 13 to 17 years. Recently, it was reported that the estimated current incidence of scoliosis, Scheuermann's Disease, and round back problems is 3,000 to 4,000 new patients per year.[20]

Treatment

Every structural curve is potentially progressive and will usually increase rapidly with a growth spurt. Severe curves are treated by spinal fusion or internal fixation devices (metal rods). Progression of a small curve can be stopped and many deformities improved by the use of the Milwaukee brace and exercises in the brace. The brace combines the forces of distraction and lateral pressure.

Program Implications

After a child has been fitted with a Milwaukee brace, he will need to develop skin tolerance, body awareness skills, and an understanding of the effects and limitations of the brace. Toward these ends, his therapy treatment should be extended through specific corrective exercises; and active participation in recreational sports and ongoing physical education programs should be encouraged - with some guidelines. It is important to understand that increased, rather than diminished, activity is desired when wearing the Milwaukee brace.

Graded activities on the low balance beam are especially valuable for children who have just been fitted with a brace, because they aid in the development of kinesthetic awareness skills and help the wearer to compensate for anatomical distortions by requiring him to perform rotating or revolving motions with his body in positions where the forces are equally distributed on either side of a base of support. However, balance movements can cause early fatigue. For this reason, it is important to consider the nature, difficulty, and complexity of the routines in the child's program, and to limit his practice periods to 15 minutes a day. On this basis, the balance beam can be used indefinitely, but - as with any remedial agent - its limitations must be recognized and the contraindications for its use appreciated. This form of remedial exercise can be initiated in a hospital or rehabilitation center during the brace-fitting period and carried on for an indefinite period of time in the regular school physical education program if the child needs further training in balance and coordination skills.

Participation in physical education class is encouraged after the child returns to the regular school. However, the instructor should excuse the student from certain exercises and activities that require a flexible back. These activities would include tumbling, trampoline exercises and flyaway and somersaulting apparatus dismounts which involve heights. Milwaukee brace wearers should never be allowed to act as human stabilizers in such activities as pyramid - building and dual stunts. Contact sports and certain track and field events such as pole vaulting, the running broad jump, and the high jump should also be excluded from the pupil's program.

A wide range of sports and games are permitted. Sports like volleyball, tennis and basketball include frequent movements and mobilize the trunk in extension. Skiing (on moderate slopes), ice skating and roller skating are excellent activites for maintaining dynamic balance and correct posture. Small craft activities, horseback riding, dancing, bicycling, archery, bowling, badminton, table tennis, and a few track events such as short dashes and relays are perfectly acceptable. Gymnastic activities including those performed on uneven parallel bars, still rings, and horizontal bars are also recommended if the fundamental skills are developed through logical, graded sequences.

The Milwaukee brace may be removed for swimming. This activity is especially useful because it is an excellent medium for strengthening key postural muscles and for improving general body mechanics. The side and back strokes are especially helpful in developing spinal flexibility, in strengthening the back muscles, in improving posture, and in correcting spinal deformity for children with scoliosis. The side stroke on the side that provides the best correction for the existing spinal deviation is the most useful because of the stretching action of the upper arm and the diagonal pull of the lower arm. Likewise, the elementary back stroke, the back crawl and the breast stroke would help the individual become aware of the symmetry of the body. The crawl stroke is very controversial since it would seem to aggravate a lateral curvature of the spine just as it would be likely to exaggerate a kyphotic deformity. When using this stroke, the swimmer must keep his body as flat as possible, with his hips high and his shoulders fairly level, and the overhand stroke is a pull until it reaches a point under the shoulder. However, the internal movement of the shoulder blade after this propulsive pull can have a therapeutic effect on kyphosis; so one aspect of the motion may offset the other.

Diving from diving boards is not recommended due to the force of compression upon impact. This applies excessive stress to the spine and aggravates an existing deformity. However, there is no objection to diving from the edge of a swimming pool. Blount[21] states, "In managing spinal curvatures in immature patients I encourage swimming strongly but forbid any diving except for flat dives off the edge of the pool. With longitudinal compression of the torso there is a real hazard of permanent injury of the growing cells on the side of the concavity. The risk is the same for Scheuermann's disease and idiopathic scoliosis in adolescents and the two conditions often appear simultaneously." [22] Raney[22] feels that while swimming is under most circumstances an excellent form of exercise for children with idiopathic scoliosis or Scheuermann's disease, they should be prohibited from diving. This is primarily due to the fact in such patients muscular coordination and balance differ from those of the normal individual, and the affected individual accordingly may receive epiphyseal or other injury from inability to adjust on the impact of diving.

Through the opportunities for movement exploration and analysis provided by these types of activity, the pupil can make better choices from among the sports, games, and recreational exercises that form an integral part of physical education programs in the junior and senior high school. The task of facing friends, school, and the public in a brace is often difficult, but not insurmountable. The brace, in drawing attention to a deformity not previously conspicuous, alters the child's relationships to the outside world. Active participation in regular school programs is strongly recommended; for in addition to the desired achievements in his physical characteristics and abilities, the Milwaukee brace wearer needs contact with his peers, diversion, and respect as an individual. The physical education teacher can do much to promote a healthy personality development in his pupil by treating him as a normal student, by encouraging social contacts with her peers, and by providing an opportunity for emotional release through physical activity.

Progressive Muscular Dystrophy

Description

Progressive muscular dystrophy is an inherited disease of unknown etiology characterized by degeneration of the striated muscles. Little is known about the defective gene; most investigators believe it to be a biochemical defect, but as yet the nature of the defect is unknown. There are at least three well-defined clinical types of muscular dystrophy. The rate of progression varies in the different types of dystrophy, but as a rule, it can be said that the earlier clinical symptoms appear, the more rapid is the progression.

The facio-scapulo-humeral form is very slowly progressive and often remains static for years after mild to moderate involvement of the hip muscles. The clinical onset is usually in early adolescence, occasionally as late as mid-twenties. Weakness of the facial musculature may be the first involvement; progressive weakness of the shoulder girdle and muscles of the upper arm follows. The course of progression is very slow with plateaus of significant duration and moderate disability. Many patients live a normal life span.

The limb-girdle type is similar to the facio-scapulo-humeral form except that there is no facial involvement. The clinical onset is anywhere from the first to the third decade of life. The initial muscle involvement is usually the proximal muscles of the pelvic or shoulder girdle. The rate of progression varies; some patients die in the fourth or fifth decade and others may reach advanced age.

The childhood type, pseudohypertrophic muscular dystrophy, is the most progressive, most serious, and the most common of all the dystrophies. This affection appears most frequently at about the age of 5 years and is seen almost exclusively in boys. The initial muscle involvement is the proximal muscles of the pelvic girdle, leading to postural defects (lordosis), a waddling gait, difficulty in climbing steps and rising from the floor. The rate of progression is rapid, with no remission. By the age of 12 years extreme disability is usually present and later the patient dies of intercurrent infection. Further discussion will be limited to this type since it is the most common.

Incidence

Muscular dystrophy is found throughout the world. In the United States, according to specialists at a voluntary health association, an estimated 200,000 persons are more or less disabled with muscular dystrophy; of these, an estimated 50,000 are completely disabled.[23]

Treatment

As yet, there is no effective treatment for any of the dystrophies. Systematic exercises and physical therapy are important tools for delaying the fight against weakness and crippling. Active motion and exercises should be started at the earliest possible moment. Slings, braces, or other orthopedic devices are often recommended to help keep the weakening muscles useful. One of the important recent advances is the development of broad-spectrum antibiotic therapy to control respiratory infections, which previously had led to the deaths of most patients with pseudohypertrophic muscular dystrophy.

Program Implications

Although the therapy of muscular dystrophy still is unsatisfactory, it is important to point out that periods of inactivity are detrimental. An appropriate recreational program including sports and games can prevent atrophy through disuse and keep muscular power at a level as high as possible. The problem of television watching is worthy of reflection: It is an enjoyable pastime, but can become an escape for many dystrophic children. There is nothing active about television watching and the only exercise it affords a child is in the eye department and those are not the muscles a dystrophic child needs to worry about. Dystrophic children with restricted opportunity for physical activity almost unconsciously have a caloric intake in excess of their needs. Proper dietary intake and a diversified recreational program will usually prevent obesity and enable the child to ambulate and be functionally independent for a significantly longer period.

Therapeutic recreation specialists, physical education teachers and other professionals working with dystrophic children should remember that much can be learned from these patients, especially in the way they compensate for lack of muscle power. Slow and careful teaching of fundamental motor skills are important as the patient will find it increasingly difficult to perform physical activities without learning new ways of doing the tasks. When a child has arrived at the wheelchair stage, assistive devices are often necessary to compensate for loss of arm muscle strength. Any device which assists upper extremities to be carried through full ranges of motion, within limitations of contracture, but beyond what is possible without device, is manisfestly helpful. Sports such as air-riflery, bowling, billiards and shuffleboard can be adapted for dystrophic children. Breathing exercises and harmonica playing have helped some whose chest muscles were weakening. Typing and piano playing have been used as a means for finger and forearm exercise for older children.

The effect of exercise in muscular dystrophy needs consideration. Abramson[24] found there was some improvement in muscle strength by frequent physical therapy. There was also improved performance of activities of daily living. Hoberman[25] found in a controlled study that physical therapy did not increase the actual muscle strength, but there was improved performance of activities of daily living due to the acquisition of increased skills. Vignos and Watkins[26] indicated in their study of 24 muscular dystrophy patients that a program of maximum resistance exercises can be of significant value, especially if instituted early in the disease. Of the 24 patients, 14 had pseudohypertrophic muscular dystrophy; 6 had the limb-girdle; and 4 had the facioscapulohumeral. All of the patients showed improvement in muscle strength in the first four months, however, those with limb-girdle and facioscapulohumeral received the most benefit.

Any physical activity program which helps dystrophic children to become more active and independent is a great boost to their morale. However, fatigue has proven to be a serious hazard. Wratney states, "Somewhere between complete activity and even the slightest fatigue is the range in which a muscular dystrophic must pursue his way of life. Though it has been noted which muscle groups show weakness first and which maintain strength longest, the degree of strength and the rate of decline varies with each patient." [27] So it follows that each patient must learn his own fatigue point and stop short of it.

Swimming is an excellent activity because it encourages action, movement and change of position. The sport is especially good for maintaining existing range of motion. Some stretching is possible in swimming and is effective in treating reducible contractures. The elementary back stroke, with the arms extending overhead in the water, is especially good. The side stroke with a scissors kick is also very good. Freed from the pull of gravity by the buoyancy of water, even weak muscles can function to certain extent. Swim fins are often useful in assisting propulsion through the water.

The emotional reactions of individuals to their disability should be recognized, and skillful psychological direction through participation in recreational outlets and physical education is very important. Some dystrophic children suppress their emotions and beneath their smiling faces harbor inner hostility. Other children are spoiled due to the "over-protective syndrome" engendered by the parent-made problem of being too sympathetic. Because of a lack of participation in many of the common play activities of childhood, dystrophic children show little or no locomotor, game or sports skills. During the last two years of elementary school life the child may realize his weakness and inability to participate in games and sports, thus his attitude of inferiority becomes fixed. Judicious use of selected recreation and physical education activities can significantly prolong the period of happy and effective living, even though the course of the disease cannot be altered.

Amputations

Description

An amputation may be defined as the removal of a limb or part of a limb. Amputation may be result of an accident or it may be necessary as a lifesaving measure to arrest a disease. Some individuals are born without a limb or limbs or with defective limbs that require amputation.

Incidence

It has been estimated that the total number of amputees in the United States is approximately 311,000. Although figures on the ratio of congenital to acquired limb losses in children vary from area to area, it has been estimated that the congenital to acquired ratio is 2:1.

Treatment

There are three areas of treatment to be considered in the pre-prosthetic care of the traumatic amputee. These are: (1) the maintenance or development of as nearly normal a range of motion as possible in the affected extremity, including the prevention of any contractures or deformities occurring between the time of the amputation and the time the prosthesis is applied; (2) stump shrinkage through proper bandaging; and (3) general physical conditioning for maximal strength.[28]

The patient will usually follow an intensive course of training to learn to function as well as possible with the prosthesis (artificial limb). Certain problems need to be considered in children; these include: the continual neuromuscular and skeletal changes due to growth, and the child's limited sources of power and control.

Stump care is another important consideration. The skin of the stump is particularly susceptible to a number of disorders. Lack of ventilation, as a result of encasing the stump in a socket, often causes bacterial or fungus infections. For these reasons it is important that stump hygiene include regular, frequent, and thorough washing of the stump. A stump sock is usually worn to absorb perspiration and provide greater comfort in the socket area of the prosthesis.

Program Implications

No prosthetic device, however well-fitted or cosmetically acceptable, can be truly functional until the child has acquired enough skill to make constructive use of it. During the training period, the role of a therapeutic recreation specialist is to provide the amputee with a well-balanced program of body-awareness activities. A carefully planned program of sports and games can increase the confidence of the amputee and enhance his acceptance of the prosthesis.

Prosthetic awareness skills can be developed through unconscious movements. For example, a unilateral below-knee amputee can develop a feeling of security with his prosthesis by participating in games and sports that require constant change in pace, or unanticipated position changes as in ice skating, badminton, and tennis. Teaching crafts activities is one of the better ways of developing prosthetic skill for unilateral upper-extremity amputees.

The optimum wearing pattern will vary according to the age, needs and capabilities of the individual child. For example, in the elementary age group, refinement of grasp and release patterns for the upper limb amputee can be achieved through suitable toy play. Bean bag tossing is a particularly useful game for the purpose. Active gross motor activities such as crawling, climbing, playground play on swings and slides should be encouraged for lower-extremity amputees.

The unilateral amputee can participate in most areas of competitive organized athletics, and he should be encouraged to participate within the limits of his capacity. Athletics can play a vital role in the total rehabilitation of the juvenile amputee. Physicians should encourage the child to participate in sports, and his parents should permit such participation.

In contact sports (football, soccer, ice hockey, wrestling) an upper-limb prosthesis should never be worn, but in many competitive sports with little or no contact, such as baseball and golf, the active use of a prosthetic terminal device is almost essential. In other activities (tennis, badminton, and track and field events such as shotput, discus, and javelin throwing) wearing an upper-limb prosthesis may help maintain balance and timing.

Unfortunately the amputee has been stigmatized to some degree. Certain restrictions have been placed upon the participation of juvenile amputees in athletics. Little Leauge Baseball advises chartered leagues that children who have arm and leg handicaps should not be permitted to play baseball but should be encouraged to participate in other sports where the risk of injury is not as great. In the Football Rule Book published by the National Federation of State High School Associations, Rule 1, Section 5, Article 3 states:

> "Illegal equipment shall not be worn by any player. This applies to any equipment which, in the opinion of the umpire, is dangerous or confusing. Types of equipment which shall always be declared illegal include...artifical hand, arm or leg."*

Thus, the player who has a prosthesis which consists only of an artifical foot may take part in interscholastic football. Similar regulations exist in wrestling and soccer.

There has been considerable discussion over this rule, as it is quite restrictive in limiting participation of amputees to those with a prosthesis on the foot. Many authorities, including physicians, advocate that each case, more specifically the unilateral below-knee amputee, should be judged on individual merits. It is not wise however, to suggest that individuals with higher amputations and prostheses or with prostheses on the arms be allowed to participate in contact sports where the wearer and his opponent might be injured. Many below-knee amputees are capable athletes and have the ability to perform the mobility skills required of interior linemen in football. The aspect of safety needs considerable attention; however, it is doubtful that a properly padded artificial below-knee would present danger to the bearer or his opponents. The shank for a below-knee prosthesis is usually made of wood reinforced with pastic laminate and is scarcely harder than the tibia bone.

Running activities are suitable for upper-extremity amputees. These activities give the amputee a chance to achieve balance with the aid of the prosthesis. The balance that is often impaired by loss of an arm or both arms can be materially developed through track events (dashes and relays) and cross-country running. Throwing a ball is an excellent activity for improving balance. Catching a ball at various levels is also excellent, particularly for lower-extremity amputees, and there are innumerable games for bouncing a ball against a wall or backboard which will intrigue children of all age levels. Throwing and catching activities are especially good for promoting weight shifting, sudden position change, and stepping in various directions.

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*The AMA Committee on Medical Aspects of Sports is in the process of reviewing various recommendations and policies limiting opportunities of individuals to participate in competitive sports. Included in this review is this football rule. New materials used in prosthetic devices may make it possible to remove the restriction on tackle football in the near future. Even then, final determination whether to participate or not should be made jointly by physician, athlete, and the family so that all possibilities and eventualities are fully understood.

Many amputees avoid swimming because of psychosocial prejudice. However, this is one of the better activities to increase endurance and promote better physical conditioning. Also, swimming does not tend to traumatize the stump area. The side stroke is recommended for the unilateral upper-extremity amputee with unaffected limb as the bottom arm. The scissors kick is usually more effective than the breast stroke kick for unilateral lower-extremity amputees, but generally few modifications in swimming strokes are needed for this group. Bilateral lower-extremity amputees should be encouraged to learn strokes with underwater recovery. This group, particularly bilateral above-knee amputees, need to be watched closely during the early phases of swimming instruction for their ability to come to a safe resting position.

Skiing is one of the most popular activities for amputees. Through skiing, the amputee can move with speed, grace and ease. The use of an outrigger increases the base of support for the lower-extremity amputee and consequently increases the ease of balance. The complete outrigger device consists of a short ski, a Lofstrand or similar crutch, and a hinge device to connect them. The Three Track Teaching Method developed at Winter Park, Colorado is based essentially on the principles of the PSIA American Teaching Method with the exception of stemming skills. The system puts much emphasis on down-unweighting in the advanced stages and concentrates on educating the foot for a powerful "steering" action of the ski. Skiing for amputees is fundamentally a strong and dynamic sport. This group of skiers have used their distinct style to win races and ski in full control on the steepest, most challenging terrain to be found.[29]

The participation of juveniles with uncomplicated unilateral amputations in competitive interscholastic athletics is possible and desirable. The same is true for children with some types of bilateral amputations. Hamilton[30] suggests the following areas of athletic participation by unimembral and/or uncomplicated amputees.

TABLE I

SUGGESTED AREAS OF ATHLETIC PARTICIPATION BY UNIMEMBRAL AND/OR UNCOMPLICATED AMPUTEES

	AK	BK	AE	BE
FOOTBALL	0	+	±	+
SOCCER	0	±	+	+
FENCING	±	+	+	+
SWIMMING	0	±	±	+
GYMNASTICS	±	±	±	±
BASKETBALL	0	±	±	±
WRESTLING	±	+	0	+
TRACK	0	0	+	+
FIELD	±	+	+	+
GOLF	±	+	+	+
TENNIS	±	+	+	+
BASEBALL	0	+	±	+

+ Participation encouraged
± Participation equivocal
0 Participation difficult or impossible

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Cerebral Palsy

Description

Cerebral palsy is a neuromuscular disability of a nonprogressive nature. The term implies difficulty in controlling the voluntary muscles due to damage to some portion of the brain. The disability is often complicated by associated problems such as intellectual retardation, speech deficiency and seizure disorder. The problem ranges from very mild to severe.

Definite diagnosis of cerebral palsy is usually possible during the first six months of life in the hemiplegic (paralysis of the limbs of one side of the body) child, but in the paraplegic (paralysis of the legs only) or quadriplegic (paralysis of all four limbs) it may not be clear until the second half of the first year or later. Another classification is deplegia (involvement primarily of both legs, with the arms affected to slight degree).

The causes of cerebral palsy may be classified into three groups:

1. Prenatal, consisting of congenital defects resulting from an arrested development of the cerebrum and pyramidal tracts in utero, incompatibility of maternal and fetal blood-RH factor, and infections in the early months of pregnancy.

2. Natal, the most frequent type, consisting of brain trauma during birth from prolonged or difficult labor, or any condition that leads to lack of oxygen for the bady for more than a few minutes during delivery.

3. Postnatal, consisting of infections, vascular, or traumatic lesions, such as those of encephalitis, meningitis, and vascular accidents.

There are seven distinct types of cerebral palsy; however, this discussion will be limited to the three most prevalent: spastic, athetoid, and ataxic. Mixtures of the characteristics of all groups may occur in any victim.

Spastic

Spasticity, occuring in approximately one half of the cases of cerebral palsy, is characterized by hyperactive reflexes and by contracted flexor muscles which produce awkward and stiff movement. Mental impairment is often associated with this type of cerebral palsy.

Athetoid

Athetosis, seen in about one-fourth of the cases, is marked by purposeless, involuntary, and incoordinate motions with varying degrees of tension. These movements cause the person to squirm or wriggle constantly. The extraneous movements are less severe when the individual is relaxed.

Ataxia

Ataxia, a less common type of cerebral palsy, is characterized by incoordination of activity and/or function due to a disturbance of kinesthetic sense. The ataxic has to concentrate to keep from falling, and his swaggering gait resembles that of an intoxicated person. Muscle tone is poor in most cases.

Incidence

The generally accepted figure for the incidence of cerebral palsy is 7 per 100,000 births. Of this number, it has been estimated that one dies, two are hospitalized, and four need treatment. The United States Public Health Service estimates 750,000 cases.[1] Evidence that the incidence of diplegia is increasing comes from California statistics which show that prematurity, as an etiological factor in cerebral palsy, increased from 47.5% to 60% between 1963 and 1972.

Treatment

Various systematic programs for the treatment of children with cerebral palsy have been documented by Phelps[2,3], Fay[4,5], Deaver[6], Rood[7], and Bobath[8,9]. There is no scientific evidence to indicate that any one method of treatment of cerebral palsy gets better results than others.

There are four primary aims of treatment: (1) to try to improve function by conservative as well as by active surgical means; (2) to try to prevent deformity; (3) if deformity develops, or has developed already, to attempt to correct or relieve it; (4) to achieve as fully a degree of habilitation or rehabilitation as possible.

The course of treatment depends upon the extent of the damage to the brain, its nature, and the age at which it developed. The physical, mental, and emotional characteristics of each individual must be carefully considered because often there is a marked difference between the person's chronological age, mental age, and physical development.

No treatment can restore a brain damaged at birth to normal function. The aim of therapy is habilitation, because new habits have to be established rather than lost functions replaced. The goal is to appraise individual assets and potentialities and to capitalize on these in order to create as useful and well adjusted a person as possible. Early treatment is particularly important. Habilitation would involve treatment of the neuromuscular symptoms; stretching of the contractures; establishment of voluntary control; assessment of developmental level and personality factors and treatment of visual, speech and hearing handicaps and seizures.

Program Implications

Normally at ages 5 and 6, a child appears to be in constant motion--wrestling, playing tag, tumbling and jumping with other children. However, cerebral palsied children are usually limited in their scope of movement due to varying degrees of motor involvement. For example, in spastic quadriplegia, children have an abnormal gait, can walk a short distance, and need crutches for support. Voluntary movements are slow and limited in range. In spastic diplegia, equilibrium reactions are usually poorly developed, especially in standing and walking. In athetosis, children have poor standing balance and manual dexterity due to extraneous movement. In all three cases the child will generally prefer to play on the floor to compensate for his physical limitations.

Often a lag in motor skill development is accompanied by a lag in other concomitant dimensions of personality such as social, emotional, and psychological aspects of human behavior. Many cerebral palsied children do not learn by spontaneous active curiosity and consequently do not play a dominant role in imagiative and expressive play. However, social contacts are very important as many children are emotionally labile. Depressions and withdrawal from contact are very understandable.

Movement education for the elementary age child is especially important. The child with cerebral palsy should move as much as possible himself and learn about his body from his own experience of movement. The cerebral palsied are often handicapped by motor deficiencies and perceptual inadequacies. As a result, a sequence of motor activities should be introduced to provide for better movement skills. A study of perception can be further documented by administering the Frostig Developmental Test of Visual Perception.[10] The classroom teacher can correlate his findings with the physical education teacher and remedial methods can be planned. Perceptual and constructional difficulties associated with brain damage are much commoner in cases of spastic cerebral palsy. including hemiplegia than in athetoids, occuring in between one-third and one-half of, for example, spastic diplegics. Another aspect of movement education that often needs consideration is laterality (internal awareness of left and right). Many cerebral palsied children do not show an obvious dominant hand. Sensory-motor training may bring about an improvement and/or establishment of hand dominance.

Various pieces of equipment can be used in perceptual training--peg boards and sticks for copying patterns and teaching spatial relationships; blocks of various sizes and different textures for matching; gym scooters for proficiency of muscular control (these are especially good for children with laterality problems). Large pieces of apparatus such as climbing frames, slides and tunnels are recommended for purposes of relating objects and space in relationship to the body.

Fait [11] reports that physical education for cerebral palsied patients is an educational activity closely related to physical therapy. It is not, however, either a duplication or a substitute for the physical therapy program. It is, rather, a complement, a valuable adjunct.

Play problems are many, but can be met successfully. Each individual will respond differently to a given motor situation, but in most cases the student-instructor ratio should not exceed 4:1. Once the child reaches school age, program guidelines should be provided so the cerebral palsied can participate successfully in group situations which foster learning, and encourage self-expression or help in social interaction with other children.

1. Highly competitive activities are not recommended. Excitement and tension must be avoided since program objectives include teaching voluntary muscle control in conjunction with relaxation techniques.

2. Early success is important. Simplify the activity so that the cerebral palsied can accomplish the task. For example, a ring-toss game can be adjusted for distance. If the individual cannot grasp or throw, place the target under foot and simply permit him to drop the ring on the target. Use lighter or heavier rings where necessary. A one-to-one ratio may be required in certain situations.

3. Free gross motor movements which aid in movement exploration are much better than those involving fine finger dexterity. Skill perfection should not be emphasized, but instead direct a program (without complicated rules and regulations) which includes body-object-space relationships (grasp, release, joint flexion and extension). Examples include suction darts, indoor horseshoes, bean bag games, ball rolling at targets and kite flying. [12]

There are various opinions regarding relaxation training as a skill to be taught by therapeutic recreation specialists and physical education teachers. Muscular relaxation appears to be essential before the development of voluntary control is attempted. However, the degree to which relaxation techniques are administered needs careful attention. It would not seem logical to spend long periods of time on developing relaxation in a child who will lose it as soon as he attempts voluntary movement. The key to successful movement experiences seems to be related to the environment in which the child finds himself at a given time. Purposeful motor skills are learned in a relaxed atmosphere. Cerebral palsied children are often hypersensitive to their surroundings, thus external stimuli (noise, congestion) should be reduced so they can develop a sense of security. Bunch [13] feels that the main objective should be directed at non-competitive involvement taking the form of games, rhythms, and the like that offer a chance of early success, not the fact that participation is dependent upon relaxation training prior to engagement in physical activities.

The child's rate of progress will be determined by his motivation and by the degree of his motor disability. The 10 and 11 year old child is conscious of needing the support of his peers. Girls become interested in their appearance. Boys often indulge in hero workshop and are full of energy and activity. Unfortunately, these are critical years in which emotional factors tend to overwhelm the cerebral palsied child. The child becomes disheartened as he grows old enough to gain insight into the degree of his disability when compared with others. Occasionally, the friendship of children with similar handicaps is needed to equalize competition and fair play. Every effort should be made to assure success in games and sports. Many children with moderate to severe involvement will need assistive devices to compensate for their lack of strength and poor neuromuscular development. Air-riflery, crossbow shooting, billiards and bowling are popular examples of recreational sports that can be adapted to meet the needs of cerebral palsied children. Shuffleboard, darts, bean bag games and horseshoes are popular games that need very little or no modifications.

A means of communication is a human need and essential to the development of a full personality. In severe cases of cerebral palsy where hand control is poor, social skills can be developed through the use of electric typewriters. An Olivetti electric typewriter with large keyboard adaptation can be used by severe spastics. Oftentimes it is necessary to bandage the child's hand in such a way that his index or middle finger is freed for typing. In certain cases a child may need to use a stick on a headpiece to punch the keyboard.

Various sources have indicated that swimming is a useful competitive recreation in which the handicapped child can take part, but hydrotherapy has no specific therapeutic effect. From experiences at the Children's Rehabilitation Center, University of Virginia Hospital, swimming has been useful in promoting neuromuscular efficiency. Obviously, the training of relaxation techniques in the water is very important, and this is often done with the aid of floatation devices while the swimmer is in a supine position. In assuming this position, gross motor patterning is often begun through passive stretching where the swimmer moves each limb with the corrective stretch. Swimming helps to promote kinesthetic sense by helping the child to control overactive abnormal reflexes. Righting and supporting reactions are stimulated and the resistance of the water activates static muscle control. In most cases a heated pool is recommended to relax tense muscles; however, under some circumstances it may be impossible to elevate the water temperature. An individual should not be denied a chance to go swimming because of this reason. Repetitive teaching techniques are important. Avoid splashing, and keep students in chest-deep water until they are able to swim.

Spastic non-swimmers have tremendous fear of falling, and the instructor should be aware of their fear of the water. Relaxation is important and spastics usually learn to swim easiest on their backs-finning, winging, and legs in flutter kick. Learning to float will help them overcome their fear of water.

The athetoid group usually do not fear water. During the elementary backstroke, they often extend their head to the side or back causing it to go under water. Often they will make more progress in deeper water than in shallow water.

The ataxic group are usually daring and not afraid of water. Balance is a major problem; consequently, the ataxic should learn a basic stroke to facilitate any awkward movements.

Very little information has been documented regarding program planning for children with cerebral palsy who need remediation in the area of visual dynamics. The incidence of visual and ocular defects has been reported between 60-80%. Strabismus is the most common finding occuring between 40-50%. Strabismus (squint, cross-eye) is a condition in which the extraocular muscles do not have balance; therefore the eyes cannot function in unison. Additional problems include the following:

1. One eye is generally not used as much as the other, and therefore poor vision in that eye results from disuse.
2. Double image as the result of absence of fusion.
3. Emotional problems due to taunting by others.

Various types of strabismus produce different effects on the eyes. The problem is often corrected before the child goes to school. However, this is not always the case. A number of children go untreated or fail to follow the recommendations as outlined by an opthalmologist.

Children who have problems in this specific area show a distinct inability to distinguish an object from its background or surroundings (figure-ground disturbance.) Ocular tracking (eye movement following a moving target) is difficult, particularly when small objects are introduced. Depending upon the recommendations by an opthalmologist, a therapist or teacher can help develop the deviating eye by patching the good or fixating eye. Training activities (games) can be introduced that will stress fixating accurately on targets at near, mid, and far points in space. An effective visual guidance system can be developed by throwing, pushing and kicking balls at wall targets and ground targets set at various distances and using both sides of the body. It is important, however, to point out that training in the perception of position in space is associated with the development of an awareness of the body as a point of reference from which objects are located.

It is often necessary to challenge the cerebral palsied child to explore his environment without the assistance of mobility aids such as crutches or a wheelchair. For example, crawling through hoops would help a spastic diplegic who has spastic paralysis of the lower limbs and clumsiness, but not gross involvement of the upper limbs. The activity would help develop the appreciation of whole-body movements and to locate the position of the object to various coordinates of the body (perception of spatial relations.) Successful movement experiences are extremely important for the purpose of developing body awareness concepts. One of the major needs of the cerebral palsied child is expression. Through expression comes the liberation of the personality. Further progression tasks in body awareness should include recognition of body in relation to objects such as climbing over an obstacle, in a box and out of a circle.

Assessment of hand function needs particular attention because disturbances are often related to deficient visual or intellectual factors, or to both. Some children with cerebral palsy do not bring their affected arms and hands into use either as frequently or as freely as they could or should do so. Hand use can often be improved by stabilizing the limbs. Two suggestions are as follows:

1. Use arm restraint straps.
2. Try stabilizing one arm. It may improve coordination of the other hand and arm.

Management Guidelines

The management of neuromuscular disabilities involves an adequate survey of the disability spectrum or profile of the patient. Mohr[14] suggests guidelines for therapists and teachers who work with children with cerebral palsy.

Spastics

1. spastics are generally more static so need mobility.
2. must reduce hypertonus by movement; normal tone must be the basis upon which normal movements are facilitated.
3. spastics move in straight planes of flexion and/or extension; normal movement is possible by helping him move with rotation through the total trunk.
4. treatment is a continual interplay between the inhibition of abnormal tone and movement, and the facilitation of the normal.
5. facilitation of movement is directed through handling not by verbal commands.
6. the extent of facilitation of movement is directly proportional to his ability with your assistance to maintain inhibition of the abnormal.

Athetoids

1. athetoids are generally hypermobile so they need stability.
2. must gain graded movement in mid-rangers which is best done with weight-bearing.
3. tend to be more asymmetrical and have poor head control therefore mid-line* activities are essential.
4. the disorganization can be modified by the therapist's simple explanation of the activity to follow with continual feedback for the "right movement" so his learning is also sensorial.
5. the upright weight-bearing position adds stability and control, thereby maximizing his performance.
6. the therapist's manner must be calm and controlled at all times with the athetoid.

*Midline is described as an imaginary line which divides the body into right and left, top and bottom, or front and back.

Program Implications

The main physical problems of the lower extremity include adduction of the leg at the hip joint, causing a flexion deformity at the hip. The calf muscles are usually very spastic and the dorsiflexors of the foot weakened, which leads to a plantar-flexion deformity of the foot. Occasionally, a short leg brace is worn until the child has control of dorsiflexion and eversion of the foot. In the upper extremity, the main handicaps are flexion of the forearm at the elbow, hypertonus of the rotators of the forearm and of the flexors of the wrist and fingers.

In evaluating the child, many observations can be made during the initial physical education or therapeutic recreation programs. For example, is the affected hand used for holding, helping, transferring, playing, assisting the dominant hand, or is it completely ignored? This is an index too, of the patient's intelligence, cooperation, independence and motivation.

Most hemiplegics are integrated into regular school settings because their physical, emotional, and intellectual deficiencies are so mild that special treatment and education techniques are unnecessary. Occasionally, a mildly affected hemiplegic with emotional difficulties will need to attend a special school for the sake of small classes and more personal attention.

In selecting activities for elementary school children, the basic urges for adventure, social competence and approval should be given utmost consideration. Two-handed activities that can be encouraged are climbing, swinging, and hammering. Locomotor skills such as jumping, skipping, and hopping are good for teaching rhythm and improving balance. Kicking a ball is excellent training because the child has to kick the ball with his affected foot while his non-affected leg supports his weight, or his affected leg has to support his weight while the non-affected leg kicks the ball.

Laterality plays an important part in the child with hemiplegia. It is not uncommon to see an 8 or 9 year-old hemiplegic who is inconsistent in making left-right judgements in relationship to his own body due to over-stimulation of the dominant unaffected side. Various sources indicate that incidence of left eyedness in children with right hemiplegia is higher than average, and the incidence of right eyedness in left hemiplegia is above average.

The hemiplegic should participate in physical education class and sports within the scope of his ability. Basketball, cycling, rowing, horseback riding and billiards are activities which encourage use of both hands. Throwing, kicking, and catching large balls stimulates bi-manual activity and balance reactions of the affected leg.

Movements of the affected limb should be on a functional basis, by work with wall bars, balls of various sizes, static bicycling and rowing machines. The progression should be slow and the height of the wall bars, the distances of bicycle handlebars and pedals, the range of movements of the oars must, at the start, be well within the capacity of the affected arm and leg since these children soon become discouraged if set what, to them, is an apparently impossible task. Later most will benefit and enjoy being "pushed" (within reason).

If an older child "discards" his affected arm and hand and uses his leg as a "prop" for momentary weight bearing then he may be able to play football and tennis and one may be inclined to think that he is able to compete with normal children. Later on, however, if the problem of vocational training arises, it will be a great handicap that he can only use one hand and the choice of trade or profession will be limited. The diplegic child with relatively unaffected hands, who could not play games but who can use both hands may be in a better position with regard to his future.

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Research and Demonstration

High Level

- Investigate effects of exercise upon muscle strength and activities of daily living of children with muscular dystrophy and other regressive/degenerative conditions.

- Determine contributions or values of comprehensive programs in or activity components of physical education, recreation, and related areas for orthopedically impaired participants including those with spina bifida, Legg-Perthes Disease, slipped femoral epiphysis, postural abnormalities, progressive muscular dystrophy, amputations, cerebral palsy, and hemiplegic cerebral palsy in children. Consider effects of these activities: (1) on such perceptual motor skills as body image, laterality, directionality, crossing midline of the body, and spatial orientation; and (2) upon self concept, peer group relationships and attitudes of orthopedically impaired children themselves.

- Develop profile of physical characteristics and personality traits that make it more/less likely certain children with orthopedic impairments will be successful/unsuccessful in specific types of physical education, recreation, and sport activities.

- Continue to investigate modifications and adaptations of equipment and devices to insure fuller participation by orthopedically impaired individuals in a variety of physical education, recreation, and sports activities.

- Determine effective and appropriate activities and approaches for developing and maintaining cardiorespiratory function and endurance in orthopedically impaired individuals; especially those unable to participate in conventional activities. For example, what are physiological benefits of active participation in wheelchair activities? In what ways can hand controlled bicycle ergometers be affectively used in this process?

- Examine cognitive development and the intellectual process in individuals with limited or no use of certain segments of the body in light of theories postulating the motor base of the intellect.

- Investigate role and contributions of active participation in physical education, recreation, and sports activities in psychomotor, cognitive, and affective development of individuals with various orthopedic conditions.

- Determine appropriate activities and individuals most likely for success in integrated physical education, recreation, and sports programs.

- Investigate ways in which activities can be modified, adapted, and approached so that more severely multiple-impaired individuals can participate in and receive benefits of competitive sports activities. Determine classification systems appropriate for and applicable to these populations.

- Compare success and receptiveness of programs in which diagnostic teams consisting of physical therapists, occupational therapists, and physical education/recreation specialists assess motor/movement/recreational needs that are met in activities planned and directed by the physical education/recreation specialist with traditional and conventional therapeutic approaches.

Mid Level

- Investigate ways in which motivational physical fitness programs and related activities can be modified and adapted to include individuals with various orthopedic conditions including those with severe multiple impairments. Review materials in terms of their applicability and use in prosthetic devices which can be safely used by orthopedically impaired individuals in various activities including contact and competitive sports.

- Determine extent of involvement and participation of orthopedically impaired individuals in regular and special (1) corrective/therapeutic/remedial, adapted, and developmental physical education programs and (2) therapeutic recreation programs.

Personnel Preparation

High Level

Develop inservice and preservice training materials and opportunities through paraprofessional, undergraduate, and graduate professional preparation programs, workshops, seminars, symposia, orientation sessions, institutes, and conferences to:

- Provide skills, knowledges, and competencies for programing in these areas for individuals with various orthopedic impairments. Stress selection and modification of activities that are appropriate for individual participants in relation to their medical conditions and the therapeutic contributions of specific activities. Emphasize working as members of rehabilitation-education teams.

- Explore ways in which individuals with various orthopedic conditions can better serve as their own advocates, especially in important decision and policy making capacities in physical education, recreation, and sports programs.

- Develop differential staffing patterns in which various specialists, resource personnel, paraprofessionals, and volunteers work as a unified team in meeting needs of orthopedically impaired individuals in physical education, recreation, and sports activities.

- Encourage and provide opportunities for more orthopedically impaired individuals to become professionally involved in the delivery of physical education, recreation, and sports services.

- Define general and specific roles and responsibilities of specialists from various activity modalities in the delivery of services in these areas to orthopedically impaired persons.

- Identify personal characteristics and personality traits that make it more likely an individual can work effectively and successfully with orthopedically impaired individuals in regular and/or special programs.

Mid Level

- Clarify roles and responsibilities of corrective therapists, athletic trainers, and related specialists in providing physical education and sports activities to orthopedically impaired persons.

Media Services

High Level

- Disseminate information about adapted equipment and devices so that greater utilization can be attained by larger numbers of orthopedically impaired participants.

- Use physical education, recreation, and sports activities as bases for communicating about orthopedically impaired persons to change attitudes about eliminating barriers confronting, improve opportunities for, and increase acceptance of these populations.

PHYSICAL EDUCATION AND RECREATION FOR THE VISUALLY HANDICAPPED

Charles Buell

State of the Art

Misconceptions of the impact of the loss of vision and negative attitudes toward blindness are so commonly held by a large segment of the general public, and to a lesser extent by parents and educators of blind children, that some consideration must be given to the matter before focusing on physical education and recreation.

Attitudes Towards Blindness

Helen Keller and many other blind people have said that the greatest barrier to success and happiness for visually handicapped individuals is not the loss of vision, but the presence of widespread negative reactions to blindness in the environment. In public schools blind children are accepted in the classroom, but a large percentage of them are not permitted to participate in vigorous physical education activities, which are necessary to develop physical fitness. The public spends millions of dollars to train visually impaired persons, but refuses to employ a large percentage of them in regular industry. Those who are not so employed are forced to sit idle, or work in industries subsidized by governmental agencies. Those who have been excluded from vigorous physical education, employment in regular industry, and full acceptance into society, are not helpless, mentally retarded, immobile, etc. as is commonly believed. In a general way, it can be said, that most blind people have adjusted to their handicap, but that most people around them have not.(46, p. 4)

The discrimination faced by blind persons is greater than that faced by almost any other minority group. There are at least two reasons for this. First, many of the attitudes toward blindness commonly found in the general public are very strong and often based upon emotion, rather than rationality. Entire books discuss the problems.(10, 40) Second, blind people find it very difficult to make themselves heard because they form such a small part of the population--far less than 1%. So, it is difficult to widely disseminate the true image of blindness. However, through the 50,000 member National Federation of the Blind,(67) the American Council of the Blind,(61) and other organizations of blind people, factual information is being made available. Information is also disseminated by the American Foundation for the Blind,(62) National Association for the Visually Handicapped,(66) Association for the Education of the Visually Handicapped,(65) American Association of Workers for the Blind,(60) and other agencies for the blind. Although these efforts have had some success, they have had only limited impact upon the general public.

What is an objective approach to blindness? Basically, it is to concentrate on what is left, rather than on what has been lost. The principle can be illustrated by turning to athletics. If a star player is lost, a coach develops his game plan around the remaining capabilities of the team. If a baseball pitcher finds his curve is not breaking well in a game, he turns to the other types of pitches he has. Thus, a blind person makes use of his remaining assets, other senses, brain, personality, muscular strength and coordination, etc. In thinking of assets, it is well to remember that three-fourths of the so-called blind have some useful vision.(66) Blindness is not a tragedy. Rather it is a nuisance which can be overcome.

Experience and research show that those who have lost their vision do not differ much from those who have normal vision. Certainly, blind people are much more like sighted people than different from them. In his extensive studies, Hayes(29) found little difference between the intelligence of blind and sighted children. Of course, there are some concepts which sightless children, particularly those blind from birth, do not have. However, this does not prevent such an individual from obtaining as much education as his sighted peers. Research has shown that loss of vision does not affect one's personality.(22, 30, 54) In the large number of physical activities which do not require vision to perform, sightless children perform as well as do their sighted peers.(15) Difficulties in mobility can be overcome, and blind persons travel in the city, in the nation, and even around the world. A well-known educator of the blind, Berthold Lowenfeld,(36, p. 41) sums up the research on blind children when he states, "the achievements of most blind children who have no additional impairments compares well with their seeing peers."

As might be expected, research shows that the attitudes of parents and teachers of visually handicapped boys and girls play a most important role, particularly during early childhood years. For example, Buell(15) and Sommers(48) carried out studies which showed how harmful over-protection was to a large number of visually impaired children. Much experience has verified Dr. Samuel Gridley Howe's belief that bumps, scratches and bloody noses affect only the bark, "and do not injure the system like the rust of inaction."

There is no evidence that blind children have more serious accidents than their sighted peers. Residential schools for the blind, some public schools, and Genevie Dexter, a well-known physical educator, verify this.

As seeing children become better acquainted with blind boys and girls, they judge the capabilities of the handicapped much more positively. They find that the limitations placed upon blind persons are not nearly so severe as most people believe. Blind individuals are their own best salesmen, particularly when permitted to participate, and not relegated to the sidelines. This common observation of teachers of the blind, is supported by research evidence.(8)

There is research evidence(41) to support the experience of many physical educators of visually impaired children. A vigorous program of physical education for blind children aids them to become better accepted by their sighted peers.

Attitudes, particularly of teachers and parents, should be based on the premise that a blind child is entitled to all of the rights and privileges of other children. If a handicapped child is not given an opportunity to try, he cannot possibly develop to his fullest potential. A law now supports this attitude. Section 904 of the Education Act Amendments of 1972 states: "No person in the United States shall on the grounds of blindness or severely impaired vision be denied admission to any course of study by a recipient of Federal financial assistance for any education program or activity, but nothing herein shall be construed to require any such institution to provide any special services to any such person because of his blindness or visual impairment." This means that any school system or college receiving Federal financial assistance can be penalized if visually impaired children are denied entrance to any course of physical education.

Facts About Blindness

According to the American Printing House for the Blind,(63) the source for most Braille and large type books in schools, there are 15,730 visually impaired children in the public schools and another 8,465 in residential schools for the blind. Under the definitions commonly used, those who have vision less than 1/10 of normal are considered to be blind, while those who have 1/10 to 1/2 of their vision are defined as partially seeing. Some children make better use of a certain amount of vision than do others.(7) This becomes confusing, because many legally blind children read regular or large type print. Today ophthalmologists encourage visually handicapped children to use their remaining vision in every way possible. Many eye experts believe that there are only a small percentage of eye conditions which can be endangered by vigorous physical activity.(1) This supports the experience in residential schools for 140 years.(12, p. 8) Even myopia is no longer a reason to excuse a child from vigorous activity.(43)

The time of onset of blindness is important. In physical activity, Buell's studies(15, p. 94) indicate that children who lose their vision after five years of age perform significantly better in such events as running and throwing balls for distance than congenitally blind boys and girls.

The amount of vision is a factor in some activities and not in others. Evidence(15, p. 93) indicates that partially seeing children perform better in running and throwing events, while there is little difference in the standing broad jump. Partially seeing elementary school children perform better on the Iowa Brace Test than do their blind peers, but there is little difference in the scores of the two groups in secondary schools.

Perhaps one more fact of blindness should be mentioned. Blind people do not have any senses other than those possessed by all human beings. When a blind person appears to be amazing, he is merely making better use of his other senses than his sighted peers do.

Physical Fitness

Physical fitness is needed by everyone, but it is even more important for visually impaired individuals. They have to use larger amounts of energy to reach the same goals as their seeing peers. Research (13, p. 141) indicates that visually impaired children perform as well as youngsters with normal vision in pull-ups, rope-climb, flexed arm hang, push-ups, sit-ups, squat-thrusts, standing long jump, standing high jump, standing triple jump, and standing hop, step and jump. As might be expected the norms in running and throwing for distance for visually handicapped youngsters are somewhat lower than those for children who have normal vision. Sightless children, particularly those blind from birth, are weakest in throwing for distance.(13, p. 142) It is reasonable to assume that vision is a factor influencing performance in running and throwing for distance.

Buell(13) has established achievement scales for blind girls, partially seeing girls, blind boys, and partially seeing boys. In some events at least 3,000 performances were used,(13, p. 141) while in others 4,500 were used.(2) In other words, 16% to 24% of the population involved was tested. Some of the events for which scales are available are basketball throw for distance, flexed arm hang, 50-yard dash, 600-yard run-walk, two minute rope jump, and 20-yard swim.

Using some of the above information, Buell has adapted,(12, 25-30) where necessary, the AAU and AAHPER Physical Fitness Tests for visually handicapped children. These organizations have given permission to make awards to visually impaired children on the basis of these adaptations. It would appear that there is sufficient information available so that a physical educator can make a reasonably accurate assessment of the physical fitness of youngsters with low amounts of vision.

Spatial Awareness in Blind Children

Cratty has studied various aspects of spatial awareness of blind children. He has established some tentative norms(23, 63-100) for walking in a straight line and veering without sight. He also has carried on some studies in training children to improve themselves in this respect. Similar studies were made in perception of gradient in walking and in facing 90 degrees, 180 degrees, and 360 degrees.

Another area in which Cratty(23, 101-120) has made some investigation is in large muscle movements. His data indicate that it is important to aid and encourage very young sightless children to move about in their environment. Such movement improves spatial awareness.

Activity Programs

There is sufficient evidence available to indicate that the activity programs offered in residential schools for the blind develop much more physical fitness, muscular coordination, and social development than do the activities offered to most blind children in the public schools where they are enrolled. In public schools where administrators and teachers have developed positive attitudes toward blindness, the physical activity programs for visually impaired children compare favorably with programs offered by residential schools for the blind. Sufficient information on the physical education programs of residential schools for the blind is available in books,(13, 34) magazine articles,(5) school papers and a national newsletter.(6) Since there are less than fifty such schools, it has been comparatively easy to gather information from them. The writer has visited nearly all of these schools.

Blind children are very widely scattered in the public schools throughout the United States. Thus, it is difficult to obtain information which accurately describes this group of handicapped youngsters. There are some magazine articles,(32, 33) and a few books (4, 12, 13, 24) which devote some space to activity programs. The writer has visited more than 150 public schools with enrollments of blind children, and has coversed with teachers from perhaps 200 other such schools. These schools probably enroll 8% to 15% of the blind students attending public schools. The writer estimates that two out of three, or 10,000 visually impaired children attending public schools are not being offered vigorous physical activity. The reason for making such an estimate is that sufficient information is not available at the present time to make a more definite statement.

Where visually impaired children are offered programs of vigorous physical exercise, the activities do not differ a great deal from those in which sighted children participate. Movement education, rhythms, tumbling, rebound tumbling, gymnastics, swimming, parachute play, wrestling, weight lifting, rope jumping, rope climb, and calisthenics need no modification for even a totally blind individual. Running activities must be modified somewhat for a sightless runner, but those who have a little vision, even less than 1/10, do not require guiding devices. To be more specific, those who have more than 3/200 visual acuity in the better eye, after correction, or more than 8 degrees visual field in the better eye, can, in most cases, run without assistance on a running track.(68) As might be expected, some adaptations in most ball games must be made for children who are sightless or have very little vision. The adaptations commonly used in baseball, football, volleyball, dashes and distance runs have been described by Buell(12) and others. Every day thousands of blind children participate in these activities.

Blind athletes have won letters in a number of interscholastic sports, but by far their widest participation has been in wrestling. In high school wrestling about 25 blind boys place in state meets each year, while about 400 others are winning many more bouts against sighted opponents than they lose.(13, p. 209)

Programs for Multiply Handicapped Blind Children

Due to the rubella epidemic of the 60's, the percentage of blind children who have an additional handicap or two is unusually high at the present time. The American Printing House for the Blind(63) lists over 6,000 students as ungraded. It is reasonable to assume that a high percentage of this group is mentally retarded. Studies(26, 45, 52) have shown that mentally retarded blind children benefit from many of the regular activities. Programs offered these children in some schools and institutions (11, 50) include hiking, jogging, swimming, roller skating, rebound tumbling, races, calisthenics, etc.

In residential schools for the blind, deaf-blind boys and girls are offered programs of vigorous physical education. At least two deaf-blind boys have won places in wrestling tournaments against sighted opponents.(69)

Special Methods

Common sense indicates that some modification may be needed in teaching activities to those with very limited vision and to those who are totally blind. Partially sighted youngsters should be permitted to be near the activity being demonstrated. For sightless children, moving body parts of the performer by the teacher or sighted classmate have proven very effective.(12, p.37) Often a sightless child can learn correct form by feeling a classmate make the necessary movements.

Special Equipment

Bell balls(62) and electronic "beeper" balls(71, 72) are available. These balls improve many games for children who have little or no vision. However, most of the "beeper" balls are not constructed well enough to continue to make sounds for more than a few weeks when put to normal usage by active blind children. An audible goal locator is manufactured(63) for blind individuals. The device is used on basketball goals and in other ways. A Sports Field Kit for the Blind(63) helps sightless players better understand such games as football and basketball.

Aids to Teachers

Very useful are newsletters, magazine articles, and books, particularly those written by Buell(13, 12) and Kratz,(34) which are listed above or in the bibliography. A 20-minute sound, color film(55) is available and shows blind children of all ages participating in a wide variety of physical activities in residential and public schools. Slides may be borrowed at no cost from Perkins School for the Blind(56) and Texas Woman's University.(57)

Courses in adapted physical education are being offered by more and more colleges and universities. From time to time, workshops and clinics devoted to physical education of blind children(39, 58, 65, 70) have been held in various parts of the country.

Recreation

There are few activities in which visually impaired individuals do not participate. Sometimes, slight modifications are made, such as the use of a guide rail in bowling.(62) These modifications do not interfere with the enjoyment of the activity by children who have normal vision. There are some visually handicapped children who may benefit for a time from recreational programs offered by agencies for the blind, but the ultimate goal is participation in activities with sighted peers. Some of these activities are swimming, hiking, camping, bowling, roller skating, ice skating, water skiing, skiing, playing of cards and checkers, watching television, and attending athletic events. Information on these and other activities is available in books by Buell,(12,13,14) Case,(20) Kratz(34) and Ritter.(44) Thousands more blind individuals could be participating fully in recreational activities with their sighted peers if their parents and the general public would encourage them.

Outdoor Education

Blind children are included in the outdoor education programs offered by residential schools and some public schools. Unfortunately, other public schools do not allow blind children to attend camp. Information on outdoor education may be obtained from the residential school for the blind in your state or from the national offices of scout organizations.

Sightless individuals(62, 67) do not want Braille trails or fragrance gardens because they perpetuate the stereotype of blindness. It is far more desirable to prepare tapes which can be listened to by blind and sighted individuals as they hike along a regular nature trail.

Needs

The first priority in physical education and recreation for visually handicapped children is to offer all of them vigorous and meaningful activities. The thousands of children who are now forced to sit on the sidelines because of negative attitudes towards blindness must be allowed to become participants. The best method known at the present time to attack the problem is through an extensive program of education. Authorities(40, p. 151) believe that education alone cannot bring about the desired changes in all cases. While educational programs are going forward, other methods to overcome these strong attitudes should be sought.

There are at least two important aspects of an educational program which should be emphasized. There is need for education through the mass media, emphasizing truths about blindness. Then there is the need to get even more facts about blindness and physical education to certain individuals in the population. Those high on this list would be parents of blind children, educators who have blind children in their schools and classes, and ophthalmologists. One way to successfully modify the behavior of many of these people is to educate them in clinics, workshops, conferences, etc. Even one-day sessions have proven very valuable. Desirable sites to hold such events are public schools and colleges in communities which have Braille and sight utilization classes. In previous clinics live demonstrations(58, 65, 70) have proven successful in modifying attitudes. So it is important to include in each clinic or workshop a demonstration of blind children participating in vigorous activities with sighted peers. Perhaps the best source of knowledgeable leaders is to be found in the physical educators in residential schools for the blind. Successful workshops for 50 educators may vary in cost from $50 to $500, depending upon circumstances.

Before many such workshops can become realities, two very difficult problems need to be solved. First, because of the wide spread existence of attitudes to be changed, it is difficult to raise the funds necessary to conduct suitable programs of education. Second, some school authorities are so strongly prejudiced against blindness that they will not give permission to hold such workshops, even if outside funds are offered. A vicious circle exists. Money is needed to fund programs to change attitudes of those who control much of the money, and who see no reason why it should be used in this manner.

Some ophthalmologists have made serious mistakes in their recommendations concerning physical activities for blind children. In the State of New York a school regulation prevents a student with less than 20/70 in the poorer eye from taking part in contact sports. A committee of the American Medical Association has recommended that individuals with the loss of vision in one eye should not be permitted to participate in contact and collision sports. In an eastern university a blind boy was so unfortunate as to sprain an ankle in his first intercollegiate wrestling bout as a freshman. The university barred him from wrestling for the rest of his four-year stay there. It is evident that there is a great need for medical men and physical educators of the blind to pool their knowledge. Clinics and workshops, bringing these two groups of experts together, is one way to improve conditions. Because blindness occupies such a small part of the practice of most medical men and women, it will be difficult to persuade them to attend workshops or clinics. It may be necessary to use financial or other inducements.

Another method of promoting the interests of handicapped individuals is to make available resource people or consultants. The work and influence of Dr. Julian Stein, Director, Programs for the Handicapped, American Association of Health, Physical Education and Recreation, has helped to promote physical education and recreation of the handicapped, including those who are visually impaired. However, consultants who devote full time to physical education and recreation of visually handicapped individuals are needed on the national level and in the more populous states. Where smaller numbers of visually impaired individuals live, a consultant might assist more than one group of the handicapped.

One of the more important duties of consultants would be to assist public schools to start or improve physical education programs for blind children. A positive approach is to conduct clinics as described above. Consultants should also assist city recreation departments to include visually impaired persons in their programs of activities. The confidence schools and recreation departments gain from the presence of consultants can result in vast improvements for visually handicapped persons.

Although there are satisfactory programs being offered visually impaired persons by some school districts and community recreation departments, evidence indicates that vast improvements are needed in most such agencies. Surveys are needed to determine how widespread are these needs. If these surveys are to be of much value, on-site evaluations, something similar to accreditation, will be needed. Due to the strong attitudes involved, the commonly used questionnaire method should not be considered. To avoid embarrassment, schools and agencies with weak programs for the blind would likely not reply, or would return false answers.

There is a need to educate visually handicapped children and their parents about their rights. For example, all such persons should have knowledge of Section 904 of the Education Act Amendments of 1972, referred to above.

There are no films available, which are entirely devoted to physical education of blind children in public schools. Such a film could be very valuable in educating parents, administrators and teachers of visually impaired children in public schools.

Some colleges require that all prospective physical educators take a course in adapted physical education. Where this requirement does not exist, there is a need for it.

There is a need in public school physical education programs for curriculums in which a child becomes aware of his potential, so that he needs not to be expected to try an activity for which he is physically unfit. Programs which offer this type of individual attention are ideal for handicapped children.

If negative attitudes toward blindness continue to be widespread, there will be a need for further legislation on the state level similar to Section 904 of the Education Act Amendments of 1972.

There is a need for electronic or "beeper" balls which will last far longer than they now do in normal use.

In the area of research, the greatest need is to discover better methods to change strong negative attitudes toward blindness. Two likely areas are methods of education and psychiatry.(21)

Not nearly enough is known about physical education and recreation of multiply handicapped blind children. Experimentation in this area is definitely needed.

Information on how to overcome blindness is available, and more people involved with blindness should make use of it. Understanding blindness assists doubters to become positive thinkers and doers.

Physical Education and Recreation for the Visually Handicapped

Priority Needs

Research and Demonstration

Low Level

- Conduct surveys to determine status of public school physical education and/or community recreation programs for visually impaired participants.

Personnel Preparation

High Level

- Conduct clinics, workshops, and conferences, and distribute publicity releases to mass media to change negative attitudes toward vigorous physical activity of visually impaired persons. Include factual information about participation of visually impaired individuals in physical activity programs. Recipients of information and services should be classroom and physical education teachers, parents of visually impaired children, and ophthalmologists.
- Educate visually handicapped persons and their parents about right to any course of study offered by a recipient of federal financial assistance for any educational program or activity as guaranteed by Section 904 of the Education Act Amendments of 1972. Consider advocating state legislation similar to Section 904.
- Require an adapted physical education course in undergraduate/professional preparation programs for regular physical education teachers. Such a course should include a section on programing for visually impaired participants.

Low Level

- Provide consultant services with available resource persons having background and experience in physical education and recreation for visually impaired individuals. Give assistance to staffs of public school systems, city recreation departments, and other groups sponsoring programs involving visually impaired participants.

Other or Media Services

Low Level

- Develop films showing visually impaired persons participating in regular physical education and community recreation programs to use for orientation and educational purposes.
- Expand production of electronic equipment such as "beeper balls" and "audible goals" and improve quality of existing equipment so it can be used for longer periods of time.

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EFFECTS OF PHYSICAL ACTIVITY AND EXERCISE UPON ASTHMATIC CHILDREN*

State of the Art

For too long children with asthma have been categorically and automatically excluded and discouraged from actively participating in vigorous physical education, recreation, and sports programs. Such restrictions have resulted from erroneous fears that exertion required for exercise and activity might precipitate attacks and contribute to the severity of the condition. Because of such limitations, asthmatic children have often developed patterns to suppress physical activity. This has deprived them of initiative and confidence so that their participation in and contributions to society have been less than optimal. Psychological stresses created by these situations not only affect asthma but can actually bring on attacks. However, more limiting than asthma itself, have been restrictions imposed on asthmatic children by overindulging and overprotecting parents, medical ignorance, misinformed physical educators and coaches, and the children themselves who try to manipulate other people to achieve their ends. For example --

- Well intentioned parents have tried to protect their asthmatic children by sheltering and shielding them from all physical activity and exertion.
- Physicians have made patients suffering from asthma more difficult by insisting upon prolonged periods of bed rest.
- School personnel have known little about the condition and preferred that these children sit on the sidelines rather than risk asthma attacks during participation in physical education or sports activities.
- Communities have considered asthmatic children to be different, physically deficient, and unable to participate in normal physical and recreational activities.
- Asthmatic children have imposed restrictions upon themselves fearing that a particular sport might aggravate their conditions, or exposure to allergins, exercise, or activity might induce bronchospasms. Many have not participated for fear of failure or ridicule and because they lacked self-confidence;

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*At the present time the AMA Committee on Medical Aspects of Sports is developing a position paper on this subject. The material was prepared by Julian U. Stein, Director of IRUC, as a part of the longer and more detailed position paper which is scheduled for release sometime during the summer of 1975.

others have been socially and emotionally isolated often because physical activities have been so severely restricted and individuals so poorly coordinated and conditioned that they have been unable to participate in games and sports with classmates or neighborhood children.

With repeated suppression of physical exercise and activity, asthmatic children often develop lifetime patterns that prevent them from participating in physical activities even when free from attacks and asthmatic symptoms. Combinations of overprotectiveness, overindulgence, and physical inactivity frequently result in asthmatic children being unnecessarily deprived of all physical activities. Great mental suffering and loss of initiative and confidence which aid in personality adjustment to life often occurs.

Sadly such restrictions and limitations have for the most part been imposed heedlessly and needlessly. Sufficient evidence has been acquired to warrant reexamination of previous positions taken regarding activity of asthmatic children and of the physiology of asthma from the viewpoint of possible effects of exercise upon the condition. With proper medical management, the majority of asthmatic children can participate in and benefit from active participation in these activities - exclusion should be as infrequent as possible if at all. During activities, attacks necessitating withdrawal are very rare occurences. Asthma need not be a barrier to active participation in school physical education, community recreation, or sports programs.

- Rick DeMont won an Olympic gold medal in swimming in 1972 although he was later disqualified for using medically prescribed medication for bronchial asthma.

- Jim Ryun set world records in the mile and 1500 meter runs in 1966 and 1967 despite asthma.

- Robert Fusaro, another outstanding athlete with asthma, is the only Caucasian in America to hold a fourth-degree black belt in the Japanese school of karate.

- Asthmatic athletes have become elite performers in almost every sport in Australia including activities considered to result in exercice induced asthma--i.e., track and cross country distance running and track and road cycling.

- A touch football team representing the Children's Asthma Research Institute and Hospital has been undefeated and won the city championship in the Denver, Colorado Parks and Recreation Department League for seven consecutive years.

- Asthmatic children have participated in Little League Baseball, soccer, gymnastics, tennis, golf, skiing, and virtually any other activity as part of school physical education, community recreation, and sports programs.

- Children with chronic asthma have participated in all normal camp activities in an atmosphere inspiring confidence.

Experimental programs have shown active participation in carefully planned physical education, recreation and sports activities of great value -- psychologically as well as physically -- to all children including those with asthma. Supervised respiratory and physical exercises have been used for many years to improve respiration of children with asthma. Many doctors now recommend that restrictions on physical activities for children with asthma be lessened and that between attacks they be given the same opportunities to benefit from physical education, recreation, and sports activities as children without these conditions. In addition to identical physical, intellectual, emotional, and social benefits derived from participating in vigorous activities by all children, school physical education, community recreation, and sports programs have extra and special values for asthmatic children --

- Physically -- asthmatic children gain endurance and stamina through improved physical condition, greater aerobic capacity, and more efficient pulmonary function, develop better breathing habits, and wheeze less as physical condition improves. Both research and program experience in this area have shown that individual children are better able to ward off and prevent impending attacks and have fewer and less severe attacks. In addition, need for medication and symptomatic drug therapy has been reduced; children sleep longer, more soundly, and with increased amounts of deep sleep patterns. This in itself reduces attacks as studies have shown that night-time asthmatic attacks almost always occur during periods of light sleep stages.

- Intellectually -- asthmatic children develop better understanding of asthma and its care, have better school attendance, show greater ability to follow directions effectively, demonstrate more interest in and willingness to explore and try new things, and improve functionally through these programs and activities and attribute this progress to better physical condition and muscle tone.

- Emotionally -- asthmatic children are more self-sufficient, less dependent on others, more willing and better able to help themselves, and in general much happier children because of successes experienced in these activities. Changes in attitudes of children toward their own physical abilities have been evident. Individuals who were quite negative about their physical capacities and capabilities had almost a complete reversal during the course of programs as students became positive and enthusiastic about participating. Children who have entered programs struggling, timid, self-obsessed, and fearful have departed considerably more outgoing and confident. They have learned to compete first with themselves and then with others as they have developed ability to enjoy benefits of an active life. A great deal of overall progress in emotional stability and maturity has been noted.

- Socially -- asthmatic children have emerged from these programs more outgoing, showed progress in personality development, and have been better able to get along with other children and friends.

All asthmatic children, regardless of the severity of their condition, need opportunities in a variety of physical education, recreation, and sports activities --

- Developmental -- provide or extend therapeutic or rehabilitation activities according to each child's condition. Breathing exercises, practice in relaxation, and ways of building strength and endurance in muscles of the trunk, shoulder girdle, and abdomen are representative of developmental activities for asthmatic children.

- Physical fitness and conditioning activities -- build basic levels of muscular strength and endurance, flexibility, balance, power, agility, coordination, and speed so that everyday needs and emergency situations can be met adequately. Of great importance to all children, especially those with asthma, is emphasis upon activities designed to build and maintain high levels of cardiorespiratory fitness. Many types of play, games, rhythmic activities, general movement experiences, partner activities, circuit and interval training, and use of small and large equipment contribute to development of desirable levels of physical fitness.

- Sports skills -- include 1) fundamental motor skills, 2) application of these skills to organized activities, relays, and simple games, 3) development of skills for specific sports, 4) application of specific sports skills to lead-up activities, sports, games, and athletic contests, and 5) development of skills needed to participate in a variety of individual, dual and team sports.

- Recreational activities -- emphasize opportunities to help asthmatic children 1) apply basic sports skills so they can attain some measure of success in games and activities commonly participated in by classmates and neighborhood friends, and 2) build a repertoire of games and activities for immediate recreational use and for future leisure time purposes as they grow older.

Every asthmatic child should be encouraged and prepared to participate in activities and programs with their classmates and friends in regular physical education, community recreation, and related sports programs whenever and wherever possible. The New Physical Education emphasizing individualization through exploratory and problem solving techniques makes it possible for every child to participate successfully, safely, and with personal satisfaction in regular elementary school physical education programs. Increased emphasis on elective and selective alternatives, and life-time recreational sports at the secondary level encourages asthmatic children to participate in activities consistent with their interests and abilities. No longer do they have to nor should they be permitted to be relegated to sedentary uninteresting and impractical activities that do nothing for them. Participation in school intramural, extramural, and interscholastic activities is to be encouraged along with similar opportunities sponsored by municipal recreation departments and community agencies.

Since many specialists consider swimming an optimum sport and recreational activity for asthmatic children, it is highly recommended and is to be encouraged. Swimming provokes less exercise induced asthma than comparable exercise obtained in other ways; all parts of the body are involved and controlled breathing is necessary. In addition to physical benefits inherent in swimming, psychological contributions are considered extremely important for asthmatic children. Swimming provides an asthmatic child with a lifetime recreational activity in which he can participate with family and friends. It also provides the necessary foundation for active participation in other aquatic activities such as water skiing, small craft, fishing, and surfing.

Coordinated teamwork between physician and physical educator represents interdisciplinary cooperation at its best. Working together is a must if asthmatic children are to attain full benefits from active participation in physical education activities.

Physicians provide diagnostic information about the condition and make general recommendations to establish the framework and limits of the program.** Other members of the school staff -- teachers, administrators, supervisors, guidance counselors, nurses, school physicians, and various specialists -- contribute additional pertinent information about the student and his behavior which is valuable in giving the program direction and meaning. The physical educator is responsible for completing the details of the program, selecting specific activities and determining exact methods since this is his area of specialization and competence. Too often the children themselves have not been a part of this process which so directly affects them. They must be included in such decisions and policy making in an era of personal accountability. Involvement of and communication with and from parents must also become a major part of this process. Modifications of these procedures must be considered and used by recreation personnel and coaches as well.

Priority Needs

Research and Demonstration

High Level

- Study mechanisms which are responsible for the frequent development of exercise-induced asthma.
- Determine effects and interactions of pollution and physical working capacities in normal and asthmatic subjects at mild, moderate, and high altitudes.
- Determine how and why physical fitness programs can improve ability of asthmatic children to tolerate their condition.
- Assess ways in which physical activity programs affect respiratory mechanisms in terms of their relationship to the physiology of asthma and the frequency and severity of asthmatic attacks.
- Investigate patterns of administering various medications to control asthma and their effects on and relationships to type and intensity of exercise/activity that can be tolerated by asthmatic children.
- Determine the role of exercise and physical activity in identifying and rehabilitating children with asthma.

**A new concept in adapted physical education forms using the concept was reported in the *Journal of Health, Physical Education, Recreation*. This form is currently being reviewed by the AMA Committee on Medical Aspects of Sports for endorsement.

- Assess ways in which active participation in physical education, recreation, and sports programs contribute to affective and social development of asthmatic children.

- Increase emphasis upon field studies in on-going programs to study many of the identified areas.

Mid Level

- Continue to assess physical fitness and exercise tolerance levels of asthmatic children.

- Study and compare adaptations to and consequences of exercise in normal and asthmatic children.

- Investigate effects of active participation in physical education, recreation, and sports programs upon type, frequency, and strength of medication required to control asthma.

- Replicate experimental studies that have been reported regarding effects of progressive activity programs upon control of asthmatic attacks. Expand and extend these studies with larger populations including those spanning different age ranges.

- Conduct experimental studies and demonstration projects with strong evaluation components to obtain additional evidence regarding effects of camp and related recreation programs upon psychomotor, affective, and cognitive domains of asthmatic children. Much of existing evidence in these areas has resulted from empirical reports and subjective observations.

Personnel Preparation

Provide inservice and preservice training materials and opportunities through paraprofessional, undergraduate, and graduate professional preparation programs, workshops, seminars, symposia, orientation sessions, institutes, and conferences to disseminate and apply research, empirical, and program information regarding relationships between exercise/activity and asthma..

Media Services

Develop and implement strategies whereby current and correct information about asthma and its relationship to exercise and physical activity are effectively communicated to physicians, parents of asthmatic children, school personnel, the public, and to asthmatic children themselves.

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PHYSICAL EDUCATION AND/OR RECREATION FOR INDIVIDUALS WITH EPILEPSY

State of the Art

Literature concerning physical education and/or recreation programs and activities for persons with epilepsy reveals controversy over participation in sports and vigorous physical activity. Historically, physical activity has been considered by many persons to be medically contraindicated; competitive/contact sports and work on high apparatus have been considered particularly dangerous. Recently, however, more physicians and educators have been encouraging persons with convulsive disorders to lead as normal and active a life as possible and to participate in sports and vigorous physical activities of their choice when seizures are well controlled.

In 1968, a joint statement[1] of the Committee on the Medical Aspects of Sports and the Committee on Exercise and Physical Fitness, American Medical Association (AMA) encouraged people with convulsive disorders* to participate in sports as well as in other types of vigorous physical activity in accordance with their individual circumstances, emotional stability, and medical management of seizures. However, the statement specified that these persons should not participate in such sports as boxing, tackle football, ice hockey, diving, soccer, rugby, lacrosse, and other activities where chronic recurrent head trauma might occur.

In 1974, the Epilepsy Foundation of America (EFA) reported** that since the 1968 AMA statement, many physicians have expressed the view that there is little evidence to support this restriction in sports. According to the EFA article, Dr. Samuel Livingston, former director of pediatric neurology at Johns Hopkins Hospital, reported a study in 1972 which had not disclosed a single case among 15,000 children with epilepsy whereby seizures were brought on or made worse by subsequent head injury. In addition, a research project being conducted by Dr. Kenneth Rose, Physical Fitness Research Laboratory, University of Nebraska (Lincoln),[2] is providing new information which so far suggests that advocates of more exercise for those with epilepsy are on the right track. Although evidence is inconclusive as to whether head injuries aggravate already existing epilepsy, Rose felt it essential for people with epilepsy to receive individual consideration regarding regular participation in physical activity.[3]

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*AMA statement refers to persons who need medical treatment for convulsive disorders such as grand mal, petit mal, psychomotor and other epileptic convulsions.

**Contact the Epilepsy Foundation of America, 1828 L Street, N. W., Washington, D. C., 20036, for further information on this study.

Rose's three year research project, The Effect of Exercise on the EEG and Blood Chemistry of Epileptics,[2] is studying 11 subjects to evaluate effects of vigorous physical activities and work on a treadmill as measured by electroencephalograph (EEG) recordings and by observation of actual seizures.[3] Athletic activities include tennis, handball, jogging, sprinting, hurdle and distance running, basketball, volleyball, shot put, high jump, long jump, and pole vault.[4] Preliminary findings indicate that EEG recordings do not show an increase of seizure patterns during exercise. Seizure threshold even appeared to rise -- that is, number of seizures declined.

Rose[3] felt that "...at least part of the feeling that exercise might be harmful is based on the observation that forced hyperventilation while a patient is at rest (deep, rapid breathing which increases the oxygen content of the blood) is known to cause seizures in some people." However, he felt that hyperventilation accompanying physical exercise was different from that which takes place at rest. "One major bio-chemical difference between them... is that the acidity of the blood increases with physical exercise, but decreases with hyperventilation at rest." Rose further explained[2] that:

- Rapid breathing -- often a seizure trigger -- when it occurs naturally as a result of vigorous exercise, does not increase seizures;

- Changes in blood chemistry during exercise appear to create a protective effect in which metabolic acidosis wards off seizures.

Another reason that physical exercise has been considered risky is because it was felt that fatigue might increase seizures.[3] According to Rose, "...evidence regarding the effects of overfatigue on seizure activity -- appears to justify certain restraints on the intensity of the physical exercise to be undertaken." However, "...the point of seizure onset is highly dependent on the degree of cardiovascular fitness." Rose recommended a gradual program to increase fitness to minimize possibility of undue fatigue.

According to Dr. Timothy Craig, secretary of the AMA Committee on the Medical Aspects of Sports, which is studying the question of epilepsy and sports, "The evidence (on the effects of head trauma) is divided, but there is ample evidence to show that the patients will not be adversely affected by playing any sport, including football, provided the normal safeguards...are followed, and adequate head protection is used."[2] Although it might be better to encourage a young boy or girl to participate in non-contact sports, consideration should be given to any patient with well controlled seizures who has a great desire to participate in contact sports if this is deemed a major ameliorating factor in his/her adjustment to school, associates and the seizure disorder.

In summary, information to date indicates that vigorous exercise, in certain situations, appears to reduce seizure potential of persons with epilepsy rather than causing additional seizures. However, complete information is not available at this time from Rose's study; it is hoped that final results of the study will provide additional support for less restrictive guidelines for participation in vigorous physical activity and competitive/contact sports. If this evidence is forthcoming, it would encourage family physicians to sign medical permission forms for this participation because of decreased risk to patients. Students with convulsive disorders would then be allowed to benefit from all the potential social-emotional, mental, and physical contributions of participating in vigorous physical activity and competitive/contact sports.

Priority Needs

Research and Demonstration

High Level

Follow-up implications of and needs for further study identified through University of Nebraska research study. Specific considerations include:

- Replicate entire study and/or components of study.
- Use larger samples, various chronological age groups, a variety of physical activities, additional measures of physiological function and bio-chemical levels, sociological and attitudinal measures, observation of severity of seizures, longitudinal and reverse longitudinal studies, and subjects with different backgrounds and types of convulsive seizures.
- Follow-up specific recommendations for future study made by research personnel involved in this study.
- Investigate effects of exercise, physical activities, and other motor/movement experiences on same factors studied in Nebraska project and recommended for further study with epileptics on individuals/groups having seizures associated with other identifiable conditions; i.e., mental retardation, brain injury, multiple impaired.

Determine effects of highly emotionally charged activities on seizure threshold. Consider the following:

- Compare effects of the same physical activities conducted in situations such as physical education classes, intramural/extramural activities, interscholastic programs, and recreation settings.

- Determine traits/characteristics of individuals/groups adversely affected -- increased frequency and severity of seizures -- by highly emotionally charged activities/competition.

Personnel Preparation

High Level

Provide inservice and preservice training materials and opportunities through paraprofessional, undergraduate and graduate professional preparation programs, workshops, seminars, symposia, orientation sessions, institutes, and conferences to:

- Disseminate and apply research findings relative to participation of persons with convulsive disorders in vigorous physical activities and competitive/contact sports.

- Disseminate information to the general public via mass media regarding feasibility and desirability of persons with convulsive disorders participating in vigorous physical activities and competitive/contact sports so that attitudinal barriers are removed.

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PHYSICAL ACTIVITY FOR INDIVIDUALS WITH DIABETES

State of the Art

A current view of the status of individuals with diabetes participating in physical and recreational activities emphasizes allowing each person to participate as fully as possible based upon medical management of that individual.[1] Today, persons with controlled diabetes are encouraged to lead active, normal lives. For example, the American Diabetes Association states:[2]

> Diet, exercise and insulin (or oral compounds), if necessary, are the three known treatments for diabetes. Plenty of exercise will not cure diabetes but it gives one a zest for living, a hobby, and that feeling of confidence and well being so necessary in the pursuit of happiness.

A number of professional athletes with diabetes have excelled in their respective sports. Many diabetic students participate with no restrictions in physical education, interscholastic, and recreational programs involving various degrees of vigorous physical activity with no ill effects or repercussions. Physicians emphasize day-to-day consistency in amount and intensity of exercise or activity along with appropriate medical management as keys to normal participation by diabetics in physical activity programs.

Information about and listings of camps for diabetic children have been found in the literature for over 20 years.[3,3A] These camps provide the same activities as other camps in addition to instruction in injecting insulin, choosing the right foods, and other assistance with medical management.[4 to 14] Opportunities for wilderness camping have also been offered to diabetic adolescents so that they might benefit from the contributions of such camping experiences.[15]

Since most children, youth, and adults with controlled diabetes participate in regular physical activity, community recreation, and sports programs in addition to special camps, and few requests for information, materials, and services for individuals with this condition have been received, no priority needs are indicated at this time for research and demonstration projects/studies. However, it is recommended that physicians, parents of diabetic children, individuals with diabetes themselves, and advocate groups such as the American Diabetes Association be contacted by personnel involved in research, demonstrations, training, and service projects and activities in physical education, recreation, and related areas for special populations to obtain input and suggestions for determining needs in these areas appropriate to individuals with diabetes.

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RECREATION FOR HEARING IMPAIRED MENTALLY RETARDED PERSONS

The following recommendations for recreation programs are based on information contained in The Hearing Impaired Mentally Retarded: Recommendations for Action, proceedings of a project funded by the Department of Health, Education, and Welfare, Social and Rehabilitation Service, Rehabilitation Services Administration, Division of Developmental Disabilities, Grant No. 56-P-71011/3-01, P.L. 66-236, Jowava Leggett, Project Officer.

Services

- Establish comprehensive recreational services to meet specific needs of all hearing impaired mentally retarded persons.
- Coordinate and/or incorporate these recreational services within existing programs and services--i.e., group agencies such as Boy and Girl Scout camps, YMCAs, YWCAs. State departments directly and indirectly concerned with recreation should combine efforts to accommodate needs of hearing impaired mentally retarded persons.
- Design recreational programs to ensure participation by all hearing impaired mentally retarded persons regardless of degree of disability, age, sex, and related characteristics.
- Include a multiplicity of activities to establish lifetime recreational skills and opportunities through special and regular recreational services.
- Design existing public and private community recreation programs to accommodate the hearing impaired mentally retarded population in the mainstream of ongoing activities including provisions to allow hearing impaired mentally retarded persons access to recreation and park facilities and services.
- Provide adequate transportation services to recreational facilities and programs for hearing impaired mentally retarded persons.
- Consider special recreational needs of hearing impaired mentally retarded persons in future federally funded recreational projects.

Personnel Preparation

- Inform employees of agencies providing recreational services and of needs and recreational potential of hearing impaired mentally retarded persons. Provide preservice and inservice training opportunities for such personnel.

RECREATION SERVICE IN RESIDENTIAL FACILITIES

Gerald S. O'Morrow, Ed. D.*

State of the Art

Preface

This report concerns itself with a critical analysis/review of the status of organized recreation service and needs within residential facilities and related centers serving persons with various handicapped conditions. Likewise, to made recommendations in terms of immediate and long-range research needs, demonstration projects, and program necessities.

It is well to initially indicate that studies concerned with recreation service in residential facilities are limited. Silson, Cohen, and Hill (1959); Berryman (1967); O'Morrow (1969a, 1969b); Neal (1970); and Kraus (1972) have been the primary investigators in this area.

It is hoped that this report will provide the basis for aiding individuals and groups offering recreation service in residential facilities as well as offering guidance and direction to federal, state and local officials responsible for funding service, demonstration, and research programs and activities.

Introduction

Consideration of the current status of recreation service to those with handicapping conditions cannot begin without first commenting briefly about the philosophy of recreation.

Recreation is not a tangible, static thing, but a vital force that influences the lives of everyone. Recreative experiences meet certain personal needs which cannot be satisfied in everyday living because of the restrictions and demands made upon individuals in their daily living experiences. It is essential to happiness, to a sense of belonging, to creativity, to accomplishment and to satisfaction in living. As stated by Gray (1971):

> Recreation is an emotional condition within an individual human being that flows from a feeling of well being and satisfaction. It is characterized by feelings of mastery, achievement, exhilaration, acceptance, success, personal worth and pleasure. It reinforces a positive self image. Recreation is a response to esthetic experience, achievement of personal goals or positive feedback from others. It is independent of activity, leisure or social acceptance.

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Through recreative experiences the individual grows and develops physically, emotionally, socially, and intellectually.

Development of the Project

The method used to gather and evaluate this project included:

1. A review of the literature.
2. A mailed questionnaire to selected residential facilities in the continental United States.
3. A limited field investigation of those responding facilities.

Although the survey sample includes examples of the major type of residential facilities for patient care -- physically and mentally ill and retarded, it is not a representative sample in a statistical sense of all residential facilities. Nearly all of the facilities (94%) in the sample were selected from the membership list of the National Association of Activity Therapy and Rehabilitation Program Directors. The remaining facilities were selected by the project investigator and consisted of facilities serving only individuals with physically disabling conditions of a long-term or permanent nature. Each facility in the sample was selected deliberately according to the criterion set forth in the Preface.

The review of the literature was limited to the Indiana State University Library and the Therapeutic Recreation Information Center (TRIC) at the University of Oregon. TRIC acquires published and unpublished articles, books, conference proceedings and reports. It abstracts them, and indexes them for storage in a computer-based information retrieval system.

The survey instrument was developed to elicit responses relative to auspices, provisions of recreation service, facilities, patient involvement in residential and community activities, source of funding, organizational structure and its effect on provisions of recreation service, and research. Because of an attempt to obtain a more personal and accurate response to the questionnaire, the investigator indicated that the names of the respondents would be kept confidential. Therefore, illustrative information is without identification.

A six-page questionnaire was mailed (November 12, 1974) to fifty residential facilities. A 70 percent response (35 facilities) was received by the cut-off date of December 15th. All responses were considered valid although one respondent did not complete the questionnaire in its entirety. This facility was presently in the process of developing their recreation service program. Seven responses were received after computations had been made. Thus, the sample consisted of 34 facilities.

The responses represented chiefly state facilities (71%) followed by equal representation among federal, voluntary, and proprietary facilities. One facility was municipal. Of the total respondents, 86 percent represented psychiatric facilities, 8 percent served the mentally retarded while 3 percent were facilities for the physically disabled, and another 3 percent indicated they provided services for all types of handicapping conditions.

The five field investigation interviews were relatively structured and were not only concerned with confirming the responses, but the assumptions that supported the responses to the questionnaire. They varied in substance depending on the respondent's background and position, the program, and the facility. On the whole, the director asked those interviewed to share their ideas about the most important problems and issues in offering provisions of recreation service in relation to patient care and treatment and to describe the direction they thought research should take in the future concerning recreation service within the facility.

The following section reports on the findings while the final two incorporate the summary and recommendations.

Analysis of Findings

After analysis of the literature and data collected, it appears that not only has there been an acceptance of the concept of recreation service by members of the medical profession and other related rehabilitation disciplines, but a substantial increase in the offering of provisions of recreation service and in the employment of full-time personnel to plan and conduct recreation service in residential facilities.

Some of the strongest support for recreation as a health service has come from physicians (Menninger, 1948; Rusk, 1953; Knudson, 1962; Wolffe, 1962; Haun, 1964; and Terry, 1965). The basis for acceptance of the concept of recreation service by the medical profession may be summarized from the proceedings of a committee study on the relationship of medicine with allied health professions. The American Medical Association commented that recreation contributes to:

> The promotion of health, the prevention of illness and further disability, the treatment of illness, and the rehabilitation of persons with physical, emotional, social, and/or intellectual disability (AMA, 1961).

A recent study by Kraus (1972) of 86 inpatient psychiatric institutions in the tri-state region of New York, New Jersey, and Connecticut found that recreation service was a widely accepted form of service. Likewise, the survey of facilities associated with this report also appears to support the acceptance of recreation service. All of the respondents indicated that their administor supported the concept of recreation service. Several examples of this support follows:

> The superintendent definitely feels that...it (recreation) is not just 'fun and games'. The opportunity to 'freeze' recreation therapy positions has been available before the last three recreation specialists were hired in. (State psychiatric research and training institute.)
>
> He has obtained new positions for recreation service, has gone to great lengths to try to obtain better salaries, has done everything possible to get more activity space and an adequate budget. (State psychiatric facility)
>
> Continuous effort to obtain more personnel to expand the existing program services being offered. (State hospital and training center for the mentally retarded)

Several investigators have reported on the increase of recreation service in residential facilities. In 1958, Phillips reported that 456 psychiatric hospitals had organized recreation programs. Silson, et al. (1959) in a more extensive study reported that in a sample of over 3500 hospitals, primarily long-term, 42 percent (1486 hospitals) had recreation programs. While there is lacking a comprehensive study to determine the exact number of residential facilities offering recreation service or a follow up to the Silson report, several studies and reports indicate that today recreation service is an integral part of the care and treatment program in residential facilities (Cortazzo and Menafee, 1964; O'Morrow, 1966, 1969a; Berryman, 1967; Hayes, 1969; Williams, 1970; Neal, 1970; Kraus, 1972; and Freeman and Koegler, 1973).

It also appears that recreation service is more extensive in public than in private residential facilities (Silson, et al., 1959; O'Morrow, 1969a). In private facilities this may be due to insufficient staff, limited budget, and lack of activity rooms or space. Public residential facilities, on the other hand, may offer a wider variety of service because of their larger inpatient load and patients tend to stay for longer periods of time. In addition, they usually have larger staff, more varied facilities and proportionally larger budgets. The present study was no exception. A large percentage of public facilities offer greater variety in their activity program on a daily and weekly basis than did private and voluntary facilities. They also had larger staffs and larger budgets. Eleven public facilities reported a budget excluding personnel service during 1973 as over $10,000.00.

At the same time some respondents felt that their budget was inadequate. Slightly over 30 percent indicated such. The most frequent reason given was the inability to expand on-grounds services and to use community resources.

Only Kraus (1972) has reported on the economic problems affecting recreation service. He reports that in 57 percent of the 86 psychiatric institutions studied there was a freeze on hiring new personnel and in 9 percent of the institutions there had been a layoff of recreation personnel. In this project study of 34 facilities, over 50 percent indicated a freeze and 6 percent indicated layoffs of recreational personnel. Examples of economic cuts include the following responses:

- cannot raise salary level
- no travel for staff
- less staff to serve patients
- unable to operate 12 month camp program
- reduction of off-ground trips for patients
- scrutinizing of purchases and/or tightening of expenditures

Since January 1973, on the otherhand, 38 percent of the facilities had hired new recreation staff. The average of the thirteen facilities reporting additional staff was 5.5. The most frequent rationale given was the reorganization of the facility into a unit system followed by expansion of services, new buildings, and reduction in patient labor within the service.

Information gathered from studies by Berryman (1967), O'Morrow (1969a), Kraus (1972), and for this project show that patients participate in recreation service, primarily activities, in one of three ways: 1) permitted complete freedom to attend any activities, 2) assigned through prescription, or 3) attend as part of ward or unit assignment, or a combination of the three.

This project showed that 82 percent of the 34 responding facilities use a combination of the three procedures mentioned.

This participation procedure is certainly not unusual since there has been traditionally two approaches used to offer organized recreation service so as to meet the rehabilitation goals and the needs of patients in residential facilities. One approach is the prescription procedure which also includes the attending of activities as part of a ward assignment. This procedure considers recreation service as a clinically oriented speciality in the specific treatment of the patient. The other, complete freedom to attend, views the procedure as non-clinical and centers on the broader concept of recreation, the subjective enjoyment and enrichment of the patient's living experience (Haun, 1967; O'Morrow, 1969a).

Recently, according to Martin (1974), there are possibly four approaches to offering provisions of recreation service, regardless of setting: 1) the "fun and games" approach wherein patients pursue activities which "approximate their use of discretionary time outside of the therapeutic environment", 2) the use of activities to help the patient make a "personal adjustment" to the anxiety resulting from the illness and stay in the hospital, 3) the "therapeutic" approach in which recreation service is a part of the therapeutic process, and 4) the "educative" approach to assist the patient to develop a deeper understanding of the value of recreation personally and its use during and after involvement in the therapeutic process.

While activity programing is the most frequently provided service to assist the facility in accomplishing its goals, the literature also reports other services such as leadership and instruction, volunteer service, diagnostic and/or progress information, recreation or leisure counseling, and consultation to other departments and agencies (Avedon, 1966 and 1974; O'Morrow, 1969a; Frye and Peters, 1972; Kraus, 1973; and Stein and Sessoms, 1973).

The direct result of an increase in facilities having an organized recreation service is observed likewise in the number of personnel employed in offering provisions of recreation service. Phillips (1958) reports that of the 456 psychiatric hospitals having an organized recreation program, 2780 persons were employed full-time to conduct the programs in 1957. Silson, et al. (1959) reported over 5000 full-time personnel and 5000 part-time engaged in offering recreation service. However, in both studies, personnel other than those trained in recreation were also responsible for the program -- occupational, physical, and music therapists respectively. In a study of recreation counseling in 290 inpatient psychiatric institutions, O'Morrow (1969a) found 2633 persons employed full-time in offering recreation service. He concluded that these personnel were primarily recreationally trained. A study conducted by the National Recreation and Park Association (Verhoven, 1969), estimated that by 1975, there would be a need for 10,938 therapeutic recreation specialists. According to Frye and Peters (1972) this estimate of the NRPA is conservative. Lastly, the U.S. Public Health Service (1973) in 1971 reported over 6000 recreation personnel employed in health facilities.

As noted above and from personal experience in the field, there are widely varying types of personnel responsible for recreation service within a single institution. Therefore, each of the facilities were asked to indicate the number of personnel, regardless of department affiliation and title who were employed full-time and part-time in offering recreation service.

Analysis of questionnaire data indicated that 367 persons were employed full-time at various levels (administrator, supervisor, leader, and aide, assistant, or trainee) in offering provisions of recreation service. This is an average of 11.1 specialist per facility. Further, over one-third of the 367 persons were employed at the aide, etc. level. Eleven facilities reported 44 part-time personnel.

The number of personnel employed per facility varied primarily with size. The larger the census, the larger the number of personnel employed to offer recreation service particularly in those facilities providing care and treatment to the mentally ill and retarded. However, in centers where there was a small census there was also a large number of personnel offering recreation service. These findings are not unlike those found by Silson, et al. (1959); O'Morrow (1969a); and Kraus (1972).

One of the problems inherent today as indicated earlier is attempting to determine if recreationally trained personnel are the ones really offering provisions of recreation service (O'Morrow, 1965, 1969a; Berryman, 1967; Kraus, 1972). Even though job specifications were requested and a large number received in the survey sample, they varied considerably by title and responsibility. This problem of identification is the result of two major factors which have occurred in the past two decades: 1) the reorganization of a facility into a unit or module system of operation, and 2) the restructuring or grouping together of similar therapeutic specialities (therapeutic recreation, occupational therapy, music therapy, etc.) into an activity therapy service or rehabilitation service. In general, the rationale for both is better service to the patient.

Kraus (1972) reports that of 86 facilities studied, over 41 percent replied that unitization had taken place in their facility. In the survey conducted for this project, over 75 percent (26 facilities) indicated a change to the unit system of operation. In addition, Kraus (1972) found that recreation service was offered by departments other than recreation in 57 percent of the facilities. In this project, 50 percent of the respondents stated that recreation was a part of a service or component of another department. The most frequent response was activity therapy (64 percent).

The field investigation and past experience as a state activity therapy director indicates that there is usually not enough recreationally trained staff to assign to every unit, therefore, personnel assigned to units, regardless of professional training and experience, will be responsible for conducting recreation activities and associated recreation services.

It is interesting to note that only four respondents in the survey sample commented that the change to a unit system had no affect on recreation program content, or the assignment of recreation personnel. Several illustrations of responses indicate the attitude toward the change:

- Better programs which contribute to meeting the needs of the patient
- Better assignment of personnel
- Better education of other professional disciplines
- Better knowledge of patient needs
- Important team member
- Additional staff to conduct recreational activities
- Better administration of services

Another indication of the positive attitude toward the unit concept may be that personnel now feel more a part of the treatment team concept. It has not been too many years ago that recreation personnel were not considered a team member because of the concept some professionals had about recreation service in treatment settings. Today, as we move towards greater comprehensive health planning to assit the patient in successful community adjustment following discharge as well as consideration of the "whole person," recreation specialists are becoming important members of the team. In regards to the "whole person," it seems appropriate to make reference to Brown's (1961) statement which apprea red some years ago:

> The result of extensive research and clinical observation has been the progressive realization that body, mind, and emotions are a unity. Hence, to treat disease while neglecting the man may not even produce cure of disease, where cure is potentially possible.

It seems reasonable to assume, therefore, that personnel responsible for provisions of recreation service would be considered members of the facilities treatment team. Berryman (1967), Kraus (1972), and this project report such a positive concept. Thirty-three respondents reported that personnel offering recreation service were considered members of the treatment team.

Relative to the treatment team, the field investigation revealed that four respondents had negative reactions toward the function of the various teams in the respective facilities. In the main, this negative attitude was directed toward the team physician. It was the general opinion of the respondents that the physician added little to the treatment team except to prescribe medication and approve patients for activities or the physician was so self-centered in his views about the patient's treatment programs that it was a waste of time to attend team meetings. At the same time, however, all of the respondents did reflect positive attitudes about some treatment teams and only wished that all would function as well.

One can only conclude from these responses and from other studies that a change to the unit system has improved service to patients. However, the quality of recreation service could possibly be questioned since the questionnaire did not attempt to measure quality. This factor would undoubtedly have to be measured by observation.

One of the factors which makes it extremely difficult to assess recreation services in residential facilities is the varying role played by volunteers. Thirty-one facilities responded that they use volunteers on a monthly basis.

The number of volunteers used ranged from 1 to 200 with the average facility using 32. It appeared that the larger the census, the larger the number of volunteers. Since the sample consisted mainly of state facilities which treat primarily the mentally ill and retarded, the larger the number of volunteers used is not unusual. The bulk of volunteers are usually associated with some organization. The associations concerned with the mentally ill and retarded have been consistently quite active for years in volunteer work in state supported facilities. Since the survey did not address itself to the part played by volunteers in either directing or assisting in the direction of recreation service, future research might very well focus on this area.

A sound and functional recreation service program will not only use community resources to augment facility programs, but will assist the patient to become acquainted with community resources and develop new interest. In addition, such activities constitute direct preparation for community living (Babow and Simkin, 1971; Woods, 1971; Kraus, 1973; Holzworth, Grot, and Hippensteel, 1973; Lindley, 1972; Woloshin and Tamura, 1969). To this end, 30 facilities responded that they use community resources. (Two responded no and two did not answer the question.) Further, and probably what is most important about this finding, is that over half of the respondents indicated that the use of community facilities is on an integrated basis. This certainly leads one to feel that the community is acceptant of the patients. Moreover, the findings of seven workshops conducted between September 1971 and August 1972 indicated that efforts were being directed toward integrating people with handicapping conditions into ongoing community programs (AAHPER, 1973).

This project also sought to learn whether the facilities have been involved in any type of research activity during the past five years and, if so, was recreation service one of the areas involved. Analysis of questionnaire data in this area indicated that 27 (79.1%) facilities were involved, but only five respondents reported that the research was totally recreation oriented and an additional four indicated that recreation was part of a larger facility research study.

Research, admittedly, is limited in the field of therapeutic recreation. However, in recent years, there has been an increase in both the quantity and quality of research in this area as a result of more individuals showing an interest in pursuing this area of study coupled with financial assistance from the federal government. The majority of studies being reported today are primarily surveys although studies on the effectiveness of programs and program design as well as comparison studies also are being reported. Many of these studies are being conducted in residential facilities (See Research Bibliography).

A major factor which has contributed to this overall limitation appears to be that few people in recreation service are in a position to devote full time to research. As one respondent commented during the field investigation: "...time is not available. All of my staff's energies are directed to meeting patient needs."

Another felt that he did not have sufficient staff to release an individual even part-time to develop research projects and then conduct the research.

Another factor which was commented upon by the respondents in the field investigation but not in the literature, is that as the result of funding limitations research is directed more toward the special interest of the researcher who in many cases is a physician or psychologist. As one survey sample respondent said: "Most of it is generated by psychologists, who tend to do their own thing." Another respondent commented that a research committee composed of physicians, psychologists, social workers, and nurses decide the research area. It was also hinted that recreation may not be considered an area of interest to those responsible for conducting research because of its personal recreation on man, therefore, it is difficult to measure its effects.

All of the survey sample respondents felt there was a need for residential recreation service research and this need was based on support for what they are doing. Over 76 percent indicated this concept of support. Further, their response to the question of what kind of recreation service research is needed is as follows:*

- effects or value of activities on patients
- evaluation techniques
- group work techniques
- program ideas
- post-discharge needs
- follow-up on patients after discharge

Information gathered from the literature and survey sample implies that in some areas of recreation service, concepts and issues are still unresolved although repeated recommendations relative to these aspects have been reported in the literature. Examples from the literature examined serves to illustrate this point. The conference on Recreation for the Mentally Ill (Phillips, 1958) showed a concern and recommended further study on the value of recreational activities in psychiatric institutions. Silson, et al. (1959), concluded the same from their study of over 2000 hospitals in the United States. McConahey (1965); Berryman (1967); Neal (1970); O'Morrow (1971); Kraus (1972); and Peterson, Knowles, and Wessel (1974) have indicated that there is a need to validate through serious investigation the concept of the value of recreational activities. In response to the survey, 47 percent of the 35 respondents indicated that research should be directed toward the value of activities.

In an attempt to explore what the respondents felt about recreation service in general within the facility, each was asked to make any additional comments. The most frequent response was that recreation personnel need to be better prepared for their job. Others included:

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*This is a partial listing. Only those with a frequency of more than three are recorded.

- funding for additional growth
- recreation service is a very important aspect of overall program
- medical staff understands concept of rehabilitation better than philosophy of individual disciplines
- training department not doing their job
- need more staff
- more joint programing, but jealousy and vested interest prevents
- poor salaries prevents quality hiring
- research department not doing relevant research
- wants treatment team to make more referrals
- cooperation from universities and colleges on internship program could be better
- staff of facility lose sight of therapeutic recreation importance, therefore, must prove importance
- excellent facilities and budget
- need to have more information about treatment of offenders which are now being accepted by institution

The response that recreation personnel need to be better prepared is not unusual. This has been a concern to educators and practitioners for many years. The professional specialization of therapeutic recreation within the broad field of parks and recreation is relatively new when compared with the other more traditional professions found in residential facilities. The profession was slow in developing, following the pattern of recreation service in community agencies. Over a period of time, recreation service developed in a variety of health related settings so that today recreation service is found in hospitals and institutions, training schools, rehabilitation centers, nursing homes, and the like. Thus, it is difficult to educationally train students majoring or interested in therapeutic recreation for every type of recreation position found in the variety of settings.

Specialized training in therapeutic recreation did not start until the early 1950's (Hospital Recreation Section, 1965). It was not until 1961 that an attempt was made to suggest curriculum models based on specific competencies (Therapeutic Recreation Development Conference, 1961). In 1969, the Society of Park and Recreation Educators reported 35 institutions of higher learning offering a major in therapeutic recreation (Stein, 1970). The series of workshops referred to earlier brought together selected educators and practitioners to develop guidelines for professional preparation programs for personnel involved in physical education and recreation for the handicapped (AAHPER, 1973).

While personnel standards and a voluntary registration plan have been developed by the National Therapeutic Recreation Society (an affiliate of the National Recreation and Park Association) and have been in existance for many years, they are difficult to promote as a result of flexible Civil Service and agency hiring requirements. But probably the major problem has been the proliferation of curriculums in this specialization with faculty not qualified either by experience or by professional preparation to prepare students for this specialization (NRPA, 1972).

Summary

In this project an attempt has been made to critically assess organized recreation service within residential facilities and related centers serving persons with various handicapping conditions by analyzing the literature, conducting a survey of 34 residential facilities, and conducting a limited field investigation. Findings of this assessment include the following:

- Studies concerned with organized recreation service in residential facilities and related centers are limited.
- There is an acceptance of the concept of recreation service by administrators and physicians in residential facilities.
- There has been a substantial increase in the offering of provisions of recreation service in residential facilities since 1958. Likewise, recreation service is more extensive in public than in private facilities, services and facilities are more varied, and staffs and budgets are larger.
- There has been an increase in the employment of personnel offering provisions of recreation service. However, it is difficult to determine in a majority of facilities who has the primary responsibility of offering and directing recreation service. Further, the number of personnel employed vary with the size of the facility. The larger the facility, the more personnel employed to offer recreation service.
- In recent years, as a result of general economic problems affecting all levels of government, it appears that in some facilities a freeze on hiring recreation personnel has occured. In other facilities, however, the opposite has occured, recreation specialists have been employed.
- There are a combination of procedures used to refer patients to recreation activity programs.
- As a result of more facilities reorganizing into a unit or module system of operation, provisions of recreation service are no longer centralized in a majority of facilities but has followed the trend of offering recreation service through the unit or module. This appears to have affected the identification of personnel recreationally trained whose primary responsibility was the offering of recreation service. However, in the facilities sampled, there was a positive attitude toward the reorganization.

- There has been a greater restructing or grouping together of similar therapeutic specialities (therapeutic recreation, occupational therapist, etc.) into an activity therapy service or rehabilitation therapy department during the last two decades.
- There appears to be a definite acceptance of recreation personnel as members of the treatment team.
- While a majority of facilities use volunteers to assist in offering provisions of recreation service, their role is defused and vague.
- A large percentage of facilities use community resources not only to augment facility programs, but to assist the patient to become acquainted with community resources and develop new skills.
- Even though the personal investigation found that patients were accepted into community resources, the literature raises questions about their acceptance.
- While there has been an increase in both the quantity and quality of recreation research in recent years, only 20 percent of the facilities sampled indicated that recreation service was involved in any sort of recreation research.
- There appeared to be, in the opinion of the sample respondents, a feeling that research was directed toward the specific interest of the researcher who in many situations is either a physician or psychologist.
- All respondents in the survey sample felt there was a need for more residential recreation service research primarily to support the value of recreation service in the facility.
- The literature and survey sample reveals that there is a very serious need to validate through research investigation concepts of recreation service.
- A large percentage of the survey sample respondents indicated that recreation personnel need to be better educationally prepared for their position.
- A review of recreation service research indicates in residential facilities that the methods by which certain problems were attacked demonstrated some inadequacies.

A brief examination of those questionnaires returned after the due date indicated no alterations in the findings presented above.

Recommendations

No profession, particularly one as recently established as therapeutic recreation, will be able to mature and grow in stature unless it can give evidence that it is willing and able to keep step with other professions in evaluating its own particular contribution.

Organized recreation service constitutes but one link in the rehabilitation process within the residential facility. It shares with other links in the system a responsibility to make a positive contribution toward the dual goals of rehabilitating the patient and assisting the patient to make an adequate adjustment in society upon release.

In a sense, recreation service in residential facilities is the application of recreation philosophies, concepts and practices to assist in the total rehabilitation of the patient. Thus, the availability of scientific knowledge about the value of recreation service is a precondition for effective recreation service. However, since the existing body of knowledge with references to such aspects as the role of recreation personnel in residential facilities, the value of recreational activities, the relationship with other residential personnel, and the like is admittedly very inadequate, the signal role of recreation research in residential facilities is obvious: Many of the widely accepted recreation service practices of today are based on tradition and prevailing opinion rather than on demonstrable scientific knowledge and should be subjected to the scrutiny of research in order to be justified.

The following recreation service research recommendations and needs, grouped under major areas of concern, while somewhat overlapping and of varying degrees of importance should be considered as essential and generally accepted for recreation service funding.

Residential Research

While no research recommendations will be made in this subsection, it is well to comment about recreation service research within residential facilities. The attitude sometimes prevails that research is the proper and sole occupation of the universities. This view is erroneous and the field has undoubtedly suffered considerably from a divorce of theory and practice. In some instances academic writing and teaching has too often been done without direct contact with patients and an understanding of its role, function and operation. The practitioners in the facility, on the other hand, frequently feel that academic writing is too much the armchair variety and has little application to their practical needs. To some degree the investigator is in agreement. However, he is more inclined to feel that it is the inability of the practitioner to apply the findings to a practical situation either because of a lack of understanding of how to apply the findings or of the inherent problems associated with residential facilities. Moreover, Helmstadter (1970) makes the point that the role of the researcher is to solve problems while that of the educator is to transmit the information and the practitioner to apply the findings. Regardless of the circumstances, an increase in the give-and-take of theory and practice is definitely indicated and is a precondition for growth of knowledge in recreation service in residential facilities.

Research in Recreation Service Programs

*1. While this investigation appears to offer some specific descriptive information about organized recreation service within residential facilities, it does not offer an indepth look at such service. Therefore, it is recommended that a national study be forthcoming to ascertain the extent and depth of recreation service within residential facilities.

This study is crucial to a better understanding of the role of recreation service within residential facilities. Because the capacity of the new computers now available is so great, many elements can be introduced into such an information service system that would have been completely impractical as recently as a decade ago. From these findings additional studies can be developed.

*2. It appears from the literature and this study that personnel other than recreationally trained personnel are involved in offering provisions of recreation service as a result of a shift to either a unit system of operation or an activity therapy or rehabilitation service. A demonstration project, therefore, should be designed to determine what are the responsibilities and shared responsibilities of recreationally trained or assigned personnel. Likewise, what are the effects of the shift on recreation personnel, professional identification, morale, and the like.

3. While not discussed specifically in this investigation, clarity as to the objectives is wanting in recreation service. Admittedly they must be in relation to the goals of the facility. However, there is the temptation to make generalization. Therefore, it is recommended that a demonstration project be conducted to determine whether the achievement of program objectives can be reasonably expected to appear in outcome data.

*4. It seems from the evidence presented in the literature and this study that while there is recognition of the value of recreation to meet individual health and welfare needs, there are basic differences in program approaches to meeting these needs. Therefore, an urgent

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*It is difficult to assign priority ratings to the following suggested studies as a result of not knowing funding availability. Those which, in the opinion of the investigator, are important have been starred (*).

need is to explore and evaluate the various approaches suggested through first a study and, thereafter, a demonstration project. The results might very well indicate approaches which should be pursued and which offer greatest promise for improving recreational programs in residential facilities.

5. This investigation of recreation service in residential settings implies that there may be different models of recreation service (staffing, organizational patterns, patterns of provisions of service, financing, etc.) associated with different settings because of the different types of handicapping conditions found in these various settings. A study is recommended to determine if models of recreation service within various settings do exist, if so, how are they similar and how do they differ.

6. There appears to be a greater need for feedback. A major problem of therapeutic recreation research is to accelerate the feedback so that recreation service administrators can base their program development and changes on the results of successful current programs.

7. It behooves the residential facility and its recreation personnel to improve the quality of its in-service training. A suggestion is the development of an in-service training package by the National Therapeutic Recreation Society which would include audiovisual aid materials, reading materials, etc. in relation to the handicapping conditions found in various facilities.

*8. If institutionalization is considered a short period in the life span of the patient, then a demonstration project is needed to determine whether recreational activities are providing training for extramural living as a primary focus of recreation service programing and as indicated in the literature.

9. It has been pointed out that administrators accept recreation service in their facility, but do they really when taken into consideration with other disciplines, treatment programs, financial problems, and the like? It is recommended, therefore, that a study be concerned with the attitude of administrators toward recreation service.

*10. Fiscal experts today are making great strides in developing techniques which will be more meaningful to administrators and legislators in identifying every dollar of expected and actual expenditure. However, there are few, if any, techniques developed in therapeutic recreation service which can be used to determine dollar value of provisions of recreation service. To this end, a study should be undertaken to determine how this dollar value might be attained.

*11. From the point of view of bridging the gap between residential facilities and community integration, it is suggested that a study be directed toward attempting to determine the attitude of public recreation personnel about accepting residential patients into their programs as well as integrating patients into ongoing programs which presently serve the community.

12. Because of the large number of volunteers used and a conclusion that their role is diffused and vague, it is recommended that a study be undertaken to determine the role and scope of volunteers in residential facilities.

Research with regards to Patients

To study the recreation service in a residential facility is a process of limited value without an accompanying study of the patient and his involvement in recreation service.

*1. It has been noted that there is a need to seriously investigate the concept of the value of activities. Traditionally, recreation specialists have worked with groups. More recently they have centered on working with individuals. It is reasoned that each patient is a separate person with a different history; he is at a certain stage in his illness and behaves in a somewhat different manner than any other patient. Thus, rehabilitation efforts must be oriented toward discovering which activities produce the best results. For example, some questions become: What activities will most benefit the patient? In what amount should they be given? Answers to these questions and others can then be used to plan a therapeutic recreation program. However, at this stage of development in therapeutic recreation there are no adequate answers. Therefore, it is recommended that: a) a series of studies be undertaken directed toward the identification and development of effective activity analysis techniques, b) a series of studies directed toward the development of assessment techniques relative to a variety of identified patient needs, and c) a demonstration project focusing on a greater comprehension of the characteristics and qualities inherent in specific activities (Peterson, Knowles and Wessel, 1974).

2. With the recent changes in federal and state laws affecting patient labor, and the fact that some residential facilities indicated that they had put a freeze on hiring personnel, it might be fruitful to investigate

to determine the extent to which patients can or do replace residential employees in recreation service. Also, to what extent does it contribute to potential employment in various recreation settings following release or discharge? Further, what types of training are feasible and suitable?

3. The effectiveness of recreation service relative to patient community adjustment is open to question. There have been attempts to effectuate such a direct check, however, the direct check which measures up to the requirements of the scientific method is nonexistant. The main problem is one which plagues the social sciences in general: there are too many variables influencing the behavior of the post-discharged patient to permit isolating the role played by the residential recreation service. However, a demonstration project is recommended. The use of controls, matched samples, careful identification of measures of success or failure, all this, coupled with the more sophisticated techniques of modern quantitative analysis may yield some interesting results.

Research with regards to Therapeutic Recreation Specialists

*1. The problem of clearly defining the functions of the various personnel involved in a care-treatment-rehabilitation program is of central concern to the residential facility. It is of special concern to those attempting to develop a team approach to rehabilitation, for a team implies both a set of clearly defined and coordinated roles oriented toward achieving a commonly held goal and esprit de corps or satisfaction with the assigned roles and working relationships. When this investigation is examined nearly all respondents indicated that recreation personnel are members of treatment teams. Likewise, the literature indicates nearly the same. However, the question to be studied is the role of the recreation specialist on the team. How much power, authority, responsibility, recognition, and "importance" does he have? This question raises additional questions: To what extent does the role of the recreation specialist require more freedom of decision, power, and/or initiative? To what extent has training prepared the role incumbent to assume this role? What barriers stand in the way of assuming a treatment team role?

2. There is the general assumption that different staff members have different roles to perform and that each of the specialized services make a contribution to the total program. It would be of great interest to the profession to consider a study which would investigate and define

more excplicitly the role of the therapeutic recreation specialist in facilities and the characteristics of recreation service which distinguishes it from other rehabilitative discipline services.

3. A study of the time and amount of work to be given by therapeutic recreation specialist in program direction might lead to a better distribution of work load and may mean less expense for the facility while maintaining the same quality of service.

Cooperative Residential Facility Arrangements with Universities

1. A research concern consisting of a cooperative arrangement with outside institutions of higher education interested in research is encouraged. Above all, this concerns the universities which happen to be located in the vicinity or within reach of a given residential facility. The universities usually have a considerable amount of research potential, which can be directed toward recreation service problems. An alert residential facility should take the initiative in seeking out a faculty member with appropriate interest, by offering the facility as a convenient research laboratory. Very often research based in the interest of separate students and/or faculty members may be combined into larger-scope research programs.

Research Personnel

*1. In evaluating the research literature, it appears that the various investigators have used some baseline (implicitly or explicitly) to determine changes in patients behavior through the use of recreation activities. But these investigators have not made explicit the fact that they are utilizing a concept of "degree of illness or disability" in such an evaluation. Though there is not yet a generally accepted set of criteria by which to measure change, it would appear incumbent upon the investigator to specify which aspects of the patients' behavior he is focusing upon and comparing in his attempt to determine the extent to which the activity(s) effected changes in behavior.

*2. While the use of control and experimental groups is a fruitful type of research design many problems are encountered. One of the most difficult problems involved in conducting a study in a residential facility is the fact that the investigator frequently cannot control all variables which he believes to be important in effecting changes in patients. It would seem necessary, therefore, to ascertain beforehand the kinds of problems which are feasible to study in a residential setting and to devise some reliable technique for such a study.

*3. It has been noted that a rehabilitation program is composed of a large number of variables and that it is difficult to isolate those variables which affect patient rehabilitation. However, if investigators could specify more clearly which variables they consider significant and attempt to study how these variables function together as a system to effect patient rehabilitation, recreation service programs at different residential facilities might possibly be compared more accurately.

*4. It is inevitable in research that the investigator must interpret the meaning of the data which he gathers. Frequently, as reflected in recreational activity research, the investigators presented only one interpretation when other interpretations appeared to be equally tenable. It would be fruitful, therefore, for the investigators to present as many interpretations of the behavior of the patient which appear likely.

Higher Institutions Education and Training

*1. As a result of a concern for better educationally trained recreation personnel it is recommended that the National Recreation and Park Association move quickly in the development of their national accreditation program.

*2. Therapeutic recreation research as any research in the social sciences, is a professional skill. The planning and direction of research requires competent research personnel. In spite of the concern for additional research, there are few university programs which train researchers specifically for the therapeutic recreation field. It is recommended, therefore, that various funding agencies award funds to institutions of higher education for the specific purpose of preparing recreation majors to work in research.

3. That educational institutions preparing therapeutic recreation service personnel give serious attention to those materials which have been designed and recommended to develop competencies (administrative supervision, counseling, consulting, leadership, program development, evaluation, etc.).

4. Recognizing the acceptance of recreation service within the increasingly complex array of services that now exist in residential facilities suggest that additional funds be obtained for the training of professional, paraprofessional and technical therapeutic recreation personnel to further the development of adequate recreation service. In a survey related to recreation workers in residential centers for the mentally retarded for example, Decker (1968) found only a small percentage of workers trained specifically in recreation. This investigation leads one to believe likewise.

5. As therapeutic recreation curriculums grow, the concern of adequate field work experiences with proper supervision grows. The National Therapeutic Recreation Society is urged to move rapidly in the development of standards for field work placement in various residential settings.

6. Consideration might want to be given to a period of field work residency (internship) with stipend in residential facilities. It should be credited to meeting a registration level, be a part of graduate experience, or be accomplished after resident degree requirements have been met. The granting of stipends for field work experience should be encouraged because financial aid for graduate education is almost essential in this period of time.

Research Institutes

*1. Time and money should not be spent, nor should patients be involved in programs which are not regularly and thoroughly evaluated. The losses in human values and in money which results from the general failure to evaluate are beyond calculation. Therefore, it is recommended, following the suggestion of Linford and Kennedy (1971) that a series of one-week regional workshops involving residential recreation service personnel be forthcoming to teach techniques necessary to evaluate their programs.

Employment Agencies

*1. To encourage the improvement of the quality of personnel offering provisions of recreation service both the personnel standards establishing professional qualifications and the voluntary registration plan based on these standards as developed by the National Therapeutic Recreation Society should be required by all civil and merit service agencies and other agencies as the qualificati[illegible] for employment of recreation personnel.

Priority Needs

Research and Demonstration

High Level

- Develop evaluative criteria to assess behavioral changes in each program participant.
- Determine contributions of recreation service in optimal functional development of each program participant.
- Determine ways in which greater autonomy and independence of units within residential facilities affect quality and quantity of recreational services afforded residents. Assess roles of unit/ward/cottage personnel and central recreation staffs in this process.

Mid Level

- Survey extent and depth of recreation services in residential and intermediate care facilities, day care and activity centers.
- Develop demonstration projects to determine: (1) responsibilities of personnel with different activity modality specializations in providing recreation services; and, (2) effects of organizational and administrative changes on roles of these specialists.
- Explore and evaluate various program approaches through research investigations and follow-up demonstration projects.
- Determine attitudes of public recreation personnel toward integrating residents of facilities into community programs.
- Investigate and define: (1) roles of therapeutic recreation specialists; and, (2) relationships of therapeutic recreation services in relation to other rehabilitative services.

Low Level

- Identify and develop: (1) effective activity analysis techniques; and, (2) procedures to assess values and benefits of activity analysis in recreation service programs. Implement demonstration recreation projects using information obtained about activity analysis.
- Conduct demonstration projects to determine if achievement of selected program objectives can be reasonably expected to appear in outcome data.

- Determine if models of recreation service exist in various residential settings. How are these models similar/different?

- Determine models or procedures to accelerate feedback so residential facility administrators can base program developments and changes on results of successful programs.

- Determine whether recreation activities provide training and experiences for extramural living.

- Determine attitudes of residential facility administrators toward recreational services.

- Develop techniques to determine dollar value of recreational services in residential facilities.

- Determine roles and extent to which volunteers are involved in providing residential facility recreational services.

- Determine extent to which residents can or do replace employees in providing recreational services.

- Develop and implement demonstration projects to determine effectiveness of residential facility recreation services.

- Study time and amount of work given by therapeutic recreation specialists in directing programs.

- Ascertain types of problems feasible to study in residential settings and devise reliable techniques to analyze such data.

- Specify program variables that are significant to study and analyze how these variables function as a system to effect patient rehabilitation.

Personnel Preparation

High Level

- Develop relevant preservice and inservice training systems which include educational media and materials appropriate to assist residential facility personnel in programing recreational activities.

- Develop community based programs in which college/university, community school and residential facility personnel work cooperatively.

Mid Level

- Complete development of national accreditation program by the National Recreation and Park Association.
- Encourage the National Therapeutic Recreation Society to develop standards for field work placement.

Low Level

- Obtain funds from outside agencies so that institutions of higher education can better prepare recreation majors to work in research.
- Utilize previously developed materials with personnel to obtain and improve their administration, supervision, counseling, consultation, leadership, program development, and evaluation.
- Obtain additional funds to train technical and therapeutic recreation personnel.
- Establish guidelines to determine optimum length of time for various practicum and field work experiences.
- Conduct a series of one-week regional workshops to teach evaluation techniques to recreation personnel involved in residential facility programs.
- Require both personnel standards and registration as developed by the National Therapeutic Recreation Society for employment by all civil and merit service activities.

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RECREATION: COMMUNITY SERVICES

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PRIORITY NEEDS

Research and Demonstration

High Level

- Explore ways in which transportation problems as related to recreation programs and activities in rural and urban communities can be minimized or eliminated.

Personnel Preparation

High Level

- Provide preservice and inservice training through symposia, workshops, orientation sessions and conferences to assist personnel:
  (1) Design, plan and implement programs which mainstream impaired, disabled, and handicapped individuals and at the same time provide sheltered programs for those who can best be served in special settings, i.e., trainable mentally retarded, blind, deaf, crippled, learning disabled;
  (2) solve problems related to availability of free or low cost transportation;
  (3) coordinate efforts of community agencies providing services for impaired, disabled, and handicapped persons so that an individual may obtain *one stop or call* information regarding the maze of available services for these populations;
  (4) solve problems relative to identification, diagnosis, certification, and implementation of programs so that smooth and speedy delivery of services is possible;
  (5) counsel parents of children with various handicapping conditions when their demands are unrealistic in relation to total educational/recreational services and other resource demands in the community;
  (6) obtain assistance from parents of impaired, disabled and handicapped children by providing information when programs require evaluations and by encouraging participation of their children when services are established.

High Level

- Develop and disseminate audio-visual aids and technical assistance materials to community recreative administrators and staffs so that they can introduce and expand regular and special community based recreation programs for impaired, disabled, and handicapped populations.
- Continue efforts to centralize information about services, resources, and materials through centers, systems and associations such as the American Alliance for Health, Physical Education, & Recreation Programs for the Handicapped, the National Therapeutic Recreation Society, the Information and Research Utilization Center in Physical Education and Recreation for the Handicapped, and the Therapeutic Recreation Information Center.
- Disseminate information and materials about implications and ramifications of current legislation and litigation for regular and special recreation programs.

STATE OF THE ART IN COMMUNITY RECREATION FOR THE HANDICAPPED

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Introduction

The past decade has seen a revolution in national and state attitudes toward the handicapped and retarded. In many communities today, recreation for the handicapped and retarded has emerged as an essential service, as important as any other services provided.

A few years ago, the Coordinator of Mental Retardation Programs for the State of California, Human Relations Agency (1) outlined services that were considered essential for the retarded and handicapped. The list was to be used as a standard for measuring whether adequate services were available in a given community. Recreation was included as an essential service in the municipal departments, schools, social groups and clubs, Y.M.C.A.'s and Scouts, together with sixteen other services: day care, education, prevention, diagnosis, and work training.

The recent Developmental Disabilities Act, P.L. 91-517, which is one of the most significant acts of Federal legislation for funding community programs for the handicapped, lists the provision of recreation as a need, together with other services. In a recent survey of the needs of the handicapped requested by the Developmental Disabilities Council of the State of California, five counties in the State gave recreation and day activity programs, particularly for the adult handicapped, top priority. (2)

A few years ago, the word "recreation" was rarely mentioned as an essential service for the retarded and handicapped. Now, with new emphasis on comprehensive services for the handicapped at the community level, recreation is increasingly included as an important service. Some communities whose Charters already state human and civil rights of all persons to participate in organized community recreation programs, have also passed special resolutions recognizing the needs of the handicapped for recreation as well as for barrier-free facilities.

Currently there are several major guidelines and legislative acts prepared by governmental bodies at various levels that are affecting or should ultimately have positive effects on community recreation programs for the handicapped. These are concerned primarily with standard practices and building codes for the elderly and disabled to assure their accessibility to barrier-free facilities, and their right to participate in programs or activities receiving federal funds. The Rehabilitation Act of 1973 established an Architecture and Transportation Barriers Compliance Board to ensure adherence to earlier Federal legislation, which is now being activated by HEW and the General Services Administration. The Rehabilitation Act of 1973 (PL93-112) contains a non-discrimination clause which states: "No otherwise qualified handicapped individual shall by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." (3) This kind of legislation provides one vehicle which the handicapped can use to point up their rights. Advocacy groups at the local, state and national levels, which include handicapped consumers, are increasingly speaking out for their human and civil rights as citizens of their respective communities. The President's Committee on Employment of the Handicapped which is highly consumer-oriented, has established an advocacy committee on Recreation and Leisure Needs of the Handicapped. Through associations such as this, articulate handicapped and disabled persons are asked to speak on behalf of their special group.

One such opportunity occurred recently when the President's Committee on Employment for the Handicapped and the National Recreation and Park Association co-sponsored a National Forum on meeting the recreation and park needs of the handicapped. Its goal was to bring to the surface all of the problems and issues involved in providing recreation and park services for the handicapped and to arrive at creditable solutions that would afford maximum opportunities to the handicapped. Consumer groups representing special populations were invited to participate together with representatives of professional recreation and park societies, selected community-based recreation and park practitioners, and representatives of federal and state agencies concerned with recreation and park programs. Twelve major problems facing handicapped people and municipal recreation and park professionals were reviewed. They covered programs, facilities, personnel, training, planning, transportation, insurance, financing, architectural barriers, legislation, and employment of the handicapped in recreation programs.

Other national organizations are also assuming advocacy roles in support of the handicapped and the mentally retarded. The National Urban League at its 1974 Assembly, adopted a statement of concern on "Rights of the Mentally and Physically Handicapped", and recommended that the League become an enthusiastic advocate of citizens with any and all handicapped conditions:

> ..."To see that a complete range of high quality services reach these people, treatment, therapy, general health services, education, vocational training and employment in jobs suited to their abilities." (4)

A "Declaration of General and Special Rights of the Mentally Retarded" has been adopted by the International League of Societies for the Mentally Retarded, which mentions their need and right to participate in all aspects of community life, including recreation. In Article IV, it states that:

> "The mentally retarded person has a right to live with his own family or with foster parents; to participate in all aspects of community life, and to be provided with appropriate leisure time activities..." (5)

The growing nation-wide concept that services for the handicapped should be provided in the community in lieu of in state institutions, is having a profound impact on recreation programs for such people at the community level. More humane treatment has been advocated and is being implemented at the highest levels of government. On November 16, 1971, President Nixon listed as one of the nation's major goals:

> "To enable one-third of the more than 200,000 retarded persons in public institutions to return to useful lives in the community." (6)

The impact of this new concept has already been significant. States across the nation such as New York, Maine, Vermont, California, and West Virginia are in the process of "deinstitutionalization". "Deinstitutionalization", encompasses several interrelated processes. They are:

> "(1) prevention of admission by finding and developing alternative community methods of care and training; and
>
> (2) return to the community of all residents who have been prepared through programs of habilitation and training to function adequately in appropriate local settings.
>
> (3) Establishment and maintenance of a responsive residential environment which protects human civil rights and which contributes to the expeditious return of the individual to normal community living, wherever possible." (7)

The State of California has made significant progress in this respect. To date:

1. Three state institutions have closed and long range plans are under way to close all others by 1980;

2. Approximately 80% of the mentally ill who were formerly hospitalized have been released.

3. Approximately 9,000 mentally retarded are on leave of absence and have been returned to their communities. The more capable among these have been discharged from commitment, while those who will require life-time care are on leave of absence status, pending guardianship plans.

Since 1964, in the City of San Francisco alone, approximately 3,000 mentally retarded and mentally ill have been returned to the community from state institutions. This influx has brought about the establishment of some 293 board and care homes for the mentally retarded and mentally ill. These persons in turn have required a variety of services, including recreation and leisure time activities. Ultimately, local funds were made available to provide these programs.

A prediction made a few years ago by Wolfingberger, has already come true in some communities. In an article titled, "Twenty Predictions about the Future of Residential Services in Mental Retardation", the author states that:

> "The concept of the 'institution' will disappear; instead, a broader concept of 'residential service' will take its place ... affording intimate contact with ordinary citizens and ordinary community resources ... In the future, residences will increasingly be viewed as places in which to sleep, eat three meals and do some of one's living. Children in residences will go to public community schools; community physicians, clinics, and hospitals will attend to medical problems; work training and placement will be in schools, sheltered workshops and/or business establishments in the community. Swimming, bowling, dancing, movies and such will all be shared with the non-retarded in the community; shopping will be in ordinary community stores and shopping centers rather than in canteens." (8)

The above concept parallels the much-praised Scandinavian principle of normalization which envisages making available to the mentally retarded, patterns and conditions of everyday life as close as possible to the norms and patterns of the mainstream of society... The Principle also implies a normal routine of life..., leisure time activities, etc. in a variety of places. (9)

A more definitive interpretation of normalization in regard to residents means that hostels in the community should be homelike, with the 'normal' rhythms of everyday life. Homelike atmosphere in cottage-type facilities stresses the need for rugs, drapes, lamps, sofas, private bathrooms and small dining areas, with private or semi-private bedrooms. It further suggests that these group homes and hostels for the adult retarded should be looked upon mainly as homes for normal adults. Moreover, it advocates that residential facilities for mentally retarded and handicapped children should be constructed, located, operated and interpreted as homes for children and that special schools for these children should be integrated into regular schools and considered no more than schools for children and young people.

In line with the same principles of deinstitutionalization and normalization there is also a growing realization that vocational training and work placement is often not a feasible solution for many retarded and handicapped but that social activity programs can provide a very satisfactory substitute. As a result, more and more recreation is being included in the spectrum of services needed at the community level.

Some current developments at the national level that have helped to initiate, promote or expand recreation programs for the handicapped at the community level are considered in the following pages.

Summary

As will be seen in later sections of this paper, documenting both the Center's experience and that of many other local groups and agencies across the nation, there is ample evidence that every community already has the potential for beginning or expanding its own services to the handicapped. Solid, ongoing local programs, involving mostly local talents, have already proved their capacity to deal with community recreation for all types and ages of handicapped, including the multi-handicapped bedfast.

Enough studies, models, demonstrations, guidelines, philosophical concepts, are already in hand; enough usable facilities, transportation and personnel are also ready to be put to use. Enough financing can be found, both locally and all the way up to the State and Federal levels.

What is now needed is a moratorium on study, research and learned talk, especially on the part of those who limit themselves to the special needs and special diagnoses of different types of handicapped. The right to recreation and leisure services needs no more justification for the handicapped today than for the "normal" citizen, nor do the former need or wish to wear limiting labels.

We must move away from emphasizing the special needs of the handicapped for specialized programs, special and expensive equipment, sheltered environments and highly trained therapists.

This tends to discourage the generalists in community recreation - to make them feel unqualified to work with the handicapped, when actually the generalists' expertise and the fact that there are so many of them already in the community, makes it essential for them to be involved. It is also important to involve the handicapped consumer in planning and implementation of programs and to employ them wherever possible. In addition, we must not forget the vast reserve of local citizens, many of whom are willing and eager to volunteer their services and support.

In short, the time has come to START, not to talk about starting, and to start in however small a way to set our priorities where they belong -- at the service level.

I. Federal and State Participation in Funding:

One of the most significant factors contributing to the development of recreation programs at the local level is Federal participation with the states in providing funds for the development of community programs. For example, monies are provided for time-limited grants and for support of on-going services. In discussing these financial resources, it must be kept in mind that though there has been widespread discussion at top administrative levels, of massive budget cutting across the whole spectrum of government programs, at this writing there is some indication that funding of these recreation programs may not be seriously affected.

A. Training, Research and Demonstration:

The provision of federal funds for research and demonstration projects in physical education and recreation for handicapped children has had an impact on the development of community recreation programs for the handicapped. The passage of Public Law 90-170, Amendments of 1967 Title V "The Training of Physical Education and Recreation Personnel for the Mentally Retarded and other Handicapped Children" was a milestone in the promotion of the total concept of recreation and physical education for the retarded and handicapped. This program is still being implemented by the Bureau of Education for the Handicapped of the Department of Health, Education and Welfare. It provides for advanced training of specialists in recreation and physical education through support to colleges and universities and for research and demonstration projects in recreation and physical education. Twenty-four colleges and universities have received training grants for physical education and/or recreation from the Bureau over the past few years. (10)

The passage of Public Law 91-230, Title VI, "Education of Handicapped Act" in 1970 which included funding for "Research and Demonstration Projects in Physical Education and Recreation for Handicapped Children", also contributed greatly to development of community recreation programs for the handicapped. One example is the "Mobile Recreation Program for the Mentally Retarded", a statewide project in Kentucky. This project is designed to train community agencies and personnel in the development of recreation programs for the mentally retarded and handicapped. Another example: a training grant was recently awarded to the San Francisco Recreation Center for the Handicapped from the Department of Health, Education and Welfare, Social Rehabilitation Service, for the purpose of conducting a regional seven-day seminar, using the Center as a model, as an approach to developing community recreation programs for the handicapped. The success of the project has encouraged the Center to conduct similar workshops and training sessions for local and state municipal departments, private recreation agencies, colleges, etc. Future plans include conducting State and National conferences for persons who have expressed a need for guidance in establishing programs within their own communities.

The Division of Mental Retardation of the Public Health Service of HEW has also awarded grants to a number of community recreation programs, day time activities for mentally retarded children and adults. A large number of projects have initiated or expanded day time activity centers for mentally retarded adults. Under this program, our Center was awarded a Federal grant to demonstrate "How Previously Institutionalized Retarded Can Be Integrated into Community Recreation Programs." (11) The program which was inaugurated in 1967 enrolled an additional eighty-eight mentally retarded who had been on the Center's waiting list for recreation. Most of them were multi-handicapped retarded, ranging from mildly to profoundly retarded, with an age range of twenty to sixty. (The final report of this program shows the tremendous success of the project.) (12) Under the same Health, Education and Welfare Division, a Staffing Grant was also awarded to the Center to develop a physical fitness program for its entire enrollment. (13)

B. Construction & Facilities for the Mentally Retarded, Title I, Part C, P.L. 88-164: (14)

Federal funds have been made available for the construction of facilities for the handicapped and retarded, including recreation facilities. For example, the San Francisco Recreation Center for the Handicapped was awarded a 1969 grant to construct a new recreation center for the handicapped and retarded, using Hill-Burton Act funds. The original funding was one-third Federal, one-third State and one-third City. The City's matching funds were allocated in the San Francisco Recreation and Park budget. Construction delays increased costs and in the end the Center's Board of Directors had to raise 48% of the total cost. The new facility is located on a 5½ acre wooded site owned by the City and County of San Francisco. The single story building eliminates architectural barriers. Corridors and doorways are wide enough to accommodate wheelchairs. The 18,000 square-foot building houses activity rooms for arts and crafts, music and drama, a day care wing, a large multi-purpose room with stage and audio visual services, a fire place and adjacent kitchen and staff offices. All activity rooms open directly into large outside patios, with barbecue facilities and additional play and eating areas. Wall surfaces, floors and furnishings are washable for easy maintenance. Doors are color coded so that the handicapped who cannot read can identify facilities such as toilets, activity rooms, offices, and exits. In the Day Care area, floors are heated for small children and all rooms have floor-to-ceiling windows for ample light and visibility. A garage, housing the Center's fleet of buses adjoins the building. The site provides for day camping and other outdoor recreation areas with a variety of surfaces for wheelchairs and play vehicles.

C. Support of On-Going Programs:

In addition to research and demonstration projects, the Federal Government has expanded its funding of on-going programs. Day Activity and Social Rehabilitation funds are currently being provided for recreation programs on a 75% Federal, 25% State or local formula.

1. Day Care Centers

The initiation of Day Care Centers has helped greatly in promoting community recreation for the handicapped and retarded. According to the President's Panel on Mental Retardation, "Day Care for small children is outgrowing its babysitting origins and is moving toward recreation, education and social growth activities that help foster physical and mental development." (15) Some of these Centers have been established by private agencies, using Federal Day Care funds covering Aid to Families with Dependent Children, for children through 18 years of age. Our Center conducts such a program for multi-handicapped children which emphasizes early infant stimulation and includes even crib case children. Over 750 children have participated in this program since 1964. Originally initiated with A.F.D.C. funds, it is now financed by the State of California, Department of Education, Education Code, Sec. 16780. Food is included in the program, furnished by State Education Surplus Properties through a contract with the California State Department of Education, Office of Food and Nutrition Service.

2. Day Activity and Social Development Centers for Adults:

The recognition that recreation and social activity contributes greatly to the rehabilitation of the handicapped and mentally retarded, has resulted in the establishment of Day Activity and Independent Living Centers for persons over eighteen. The initiation of these programs has emphasized that recreation and social development is an essential part of vocational preparation programs and for independent community living for teens and adults. The need for such programs has become increasingly apparent with the deinstitutionalization of State institutions. These centers have been established in various communities by private agencies with Federal funds for Social Rehabilitation for individuals who are receiving Supplemental Security Income, Title XVI, which provide 75% Federal funds and require 25% matching funds. Our Center provides such a program for 428 severely handicapped and mentally retarded, 18 years and up, conducted through a contractual arrangement with the County Social Services Department which serves as the fiscal agent.

Public recreation and park departments as well as private recreation agencies are eligible for Social Rehabilitation funds. They cover the cost of staff, transportation and food, and an increasing number of public and private agencies in California, including municipal departments, are either using such funding or are seeking it to expand their recreation programs. In California, this type of financing, for children and adults, is subsidized through a contractual arrangement with the County Social Services Department which administers the Federal Funds.

In our opinion, based upon our own experience, the most significant discovery for permanent financing of recreation programs for the handicapped in a community setting is the fact that Federal funds can be used to purchase recreation, Day Care and Social Rehabilitation Services from public and private agencies on a contractual basis. A minor requirement is that, to be eligible for these funds, agencies must be licensed by the Department of Public Health or some other designated agency. Programs providing 75% Federal funds generate $3.00 for every one matching dollar required from local sources, and any local funds may be used for matching purposes. Private agencies can appeal to foundations, individuals, or tap such public funds as subsidies from recreation and park departments. For example, the Center used a $99,000 Recreation and Park Department subsidy to generate $297,000 more, or a total of $396,000, to cover A.T.D. programs shortly to be covered under Title XX of the Social Security Act. Recreation and Park Departments can use "in-kind" for matching funds. For example, if a department plans to use a building that costs $18,000 per year to maintain, this amount can be used to generate a total of $72,000 to start a program. In addition:

- The allocated cost of any facility that can be used either part time or full time can be used as the 25% matching funds.
- Any existing amount in the local budget now being used for handicapped recreation programs or social rehabilitation services, i.e., salaries, program expenses, building, or facilities, can be used as 25% matching funds.
- Cash - i.e., donations from Service Clubs, Foundations, etc. can be used - or allocated new funds in the budget can be used as 25% matching funds.

Private agencies can also obtain the 25% needed to match Federal funds through:

- Cash donations.
- County subsidy - such as funds the Center receives from the San Francisco Recreation and Park Department. These funds, A.T.D. and A.F.D.C. are contingent upon the State participating in Federal funds.

While States have an option to participate some have not yet taken advantage of this type of funding. In this case, municipal departments should allocate funds in their own budgets to provide recreation programs for the handicapped. Community groups should also work to persuade their States to participate in the Federal programs.

3. Revenue-Sharing:

Revenue Sharing P. L. 92-512 includes recreation, and can also be used to provide community recreation programs for the handicapped. A General Accounting Office survey of 250 local governments, including the 50 cities and 50 counties that received the largest amounts of revenue-sharing funds in 1972, revealed the following: (16)

a. Only about 3/10 of 1 percent ($4.3 million) of the $1.37 billion provided to the governments surveyed went to programs for the handicapped, and only 18 governments spent any of their revenue-sharing money on such programs.

b. Just over 1 percent of the revenue-sharing funds (about $15.4 million) went for children's programs.

c. Only some 2/10 of 1 percent ($2.9 million) of the total was used for programs for the elderly.

4. Regional Centers for the Mentally Retarded:

The present day concensus that the retarded and handicapped benefit greatly from a home atmosphere, led to the concept of community centers that can provide the multi-disciplinary services required by the handicapped and retarded, while allowing them to remain in their own or a foster home. In California, for example, the establishment of Regional Centers as an alternative to State Hospital placement, has made it possible for families to receive lifetime diagnostic, counseling, evaluation and referral services near their homes. These Centers, located throughout the State, investigate every appropriate service within their region, and have funds for purchasing them including recreation and camping, from "Vendors". The advent of these services not only has encouraged families to keep the severely handicapped and mentally retarded at home, but has also made community placement possible for those who had been institutionalized all their lives. Our Center and many other agencies in California are "vendorized" by a regional center and receive funds on a contractual basis for recreation and camping programs.

5. Community Mental Health Services:

In San Francisco the State Department of Public Health has established community group homes to accommodate the constantly increasing numbers of mentally retarded who have returned to the community from State Institutions. This sudden influx has created an urgent need for recreation programs at the community and neighborhood levels. Community Mental Health Services has responded to this need by purchasing recreation services from the Center on a contractual basis. Over 600 have been served to date, we have graduated 175 into public recreation, and we still have a waiting list of 43 previously institutionalized retarded and handicapped in need of recreation.

D. Developmental Disabilities:

One of the most significant recent acts of legislation, the Developmental Disabilities Services and Facilities Construction Act, P.L. 91-517, has greatly enhanced the provision of community recreation for the handicapped. This Act amends P.L. 88-164 and provides for Federal support for a wide range of diversified services in terms of the lifetime human needs of the developmentally disabled. The Act's most significant section requires that its funds must be used to supplement, expand and enrich programs and cannot be used to replace the current level of funding. It provides for developing and implementing a comprehensive plan for service, construction of facilities, training of specialized personnel, demonstration of improved techniques of services, and training grants. The term "service" means specialized services directed toward alleviating a developmental disability or toward social, personal, physical or economic habilitation of such a program. Recreation and transportation are mentioned among many other services provided. $57,583,000 was appropriated for the fiscal year ending June 30, 1974, $53,625,000 for fiscal 1975. The Center recently received a grant from the State of California, Office of Developmental Disabilities, Department of Health, to expand the number of days of service to 85 adults for recreational and social rehabilitation activities. (17)

Urban Mass Transportation Act of 1964 (Amendment to Sect. 16) Federal-Aid Highway Act allows for capital assistance to private non-profit corporations and associations for the specific purpose of assisting them in providing transportation services meeting the special needs of elderly and handicapped persons for whom mass transportation services are planned.

The Center has recently made a grant application to the Department of Transportation for the purchase of three vehicles.

E. New Legislation - Pending:

Some legislation pending at the State level would, if enacted, assist municipal departments to develop or continue recreation services for special populations. Two examples:

1. California

AB609 Recreation: Urban Needs: Grants - is a new Bill before the California Legislature "which would create a Division of Recreation and Technical Assistance in the Department of Parks and Recreation, to coordinate governmental programs to meet the recreational and leisure-time needs of residents with special recreational requirements, such as the blind, elderly, handicapped and mentally retarded. The Bill would create the California Urban Fund -- and require the transfer to the fund, in each of the fiscal years 1976 to 1981, five million dollars from certain revenues, monies, and remittances received by the Commission. The Bill would provide grants, generally on a 75% State, 25% local matching basis, of fund monies when appropriated under specified programs to applicant cities, countries, or districts to meet urban and other special recreational needs." (18)

2. Illinois

SB-220 and SB-221, pending in the Legislature of the State of Illinois, would allow park districts and municipalities to levy a tax for the provision of recreation services for the handicapped. If passed, municipalities and park districts could levy a tax without referendum to provide a significant sum of money to each community over a period of years.

II. Private Community Funding:

Every community has some private resources that could be used to establish and/or expand recreation programs for the handicapped. The fact that our Center was supported entirely through voluntary contributions for twelve years, while continuing to expand its services, indicates that a community can be informed and educated to support such programs. Since the Center's inception, we have relied heavily upon the support of local foundations, service clubs, business men and women's fraternal organizations, our parent auxiliary and our own annual fund raising events (letter solicitations, art festivals, luncheons, bazaars, etc.).

Some foundations have made substantial grants for starting new programs, for expanding existing programs and for film production; others have contributed matching funds, made grants for our new building, donated buses, wheelchairs and other equipment and supplies. Most States have a Foundation Directory that can be purchased from the Grants Management Office, Registry of Charitable Trusts or can be found in the main branch of the public library.

III. Professional Association Contributions:

It has been estimated that there are several hundred public and private organizations and associations concerned with the needs of the handicapped. Many of these groups are also involved in providing community recreation for the handicapped. Two professional associations that have made significant contributions to community recreation for the handicapped are:

A. The American Park and Recreation Society is the professional assoication for community recreators that operates through the National Park and Recreation Association. For many years it has provided consulting services on recreation for the ill and handicapped. In addition, it has published many materials on recreation for the handicapped, including an extensive bibliography, literature kit, text books, management aids and helpful articles through a monthly journal, the "Parks and Recreation Magazine".

The National Therapeutic Recreation Society, one of the seven branches of the National Recreation and Park Association, is a professional society representing the ill and handicapped through a large number of standing and special committees. It is concerned with such activities as Educational Standards and Accreditation of Recreation Therapists. HEW has funded 15 programs for services to the handicapped through the Bureau for Education of the Handicapped in the form of grants awarded to colleges and universities with a curriculum in Therapeutic Recreation.

In addition to the Special Committee on Habilitation and Rehabilitation, the National Therapeutic Recreation Society has other committees, such as those on Drug and Alcohol Addiction, V. A. Hospitals, Correctional Facilities, Facilities for Mental Retardation, Psychiatric Physical Medicine and Rehabilitation Facilities, Long Term Care, Community Based Programs. A Special Task Force includes sub-committees on Advocacy, Legislation, Camping for Handicapped, and Minority Affairs. The Society also publishes a quarterly "Journal of Therapeutic Recreation", that features a wide variety of articles concerning recreation for the handicapped.

B. The American Alliance for Health, Physical Education and Recreation is another professional association that has contributed greatly to the development of community recreation programs for the handicapped, primarily through its

"Unit on Programs for the Handicapped". It has encouraged and stimulated the development of Community Programs around the nation, through:

> "Consultative services through local, state, district, regional, and national programs of organizations and agencies interested and involved in physical education, recreation, dance, health, and safety programs for individuals with various handicapping conditions and through services to groups conducting or interested in developing programs in the areas of concern.
>
> "Leadership preparation through services, materials, and programs for personnel now in the field, for those who have not yet completed or matriculated in undergraduate professional preparation programs, and for paraprofessionals, volunteers, parents, and others of the lay community.
>
> "Program interpretation through various publications by reproducing materials and promoting pilot-demonstration programs.
>
> "Research through initiating and encouraging pertinent surveys, studies, and projects and by serving as a clearinghouse for research activities in the areas of concern."

More recently, it has developed and operates an Information and Research Utilization Center (IRUC) for Physical Education and Recreation for the Handicapped.

> "As a demonstration project IRUC is essentially a dissemination activity in which program information, research data, and related materials about general and specific aspects of physical education/adapted physical education, recreation/therapeutic recreation, and related activity areas for impaired, disabled, and handicapped persons are collected, categorized, described, interpreted, and disseminated to encourage their use in general practice." (19)

IV. Public and Private Agencies Conducting Community Recreation Programs for the Handicapped and Retarded:

A. Barriers to Programs for Handicapped and Retarded:

Numerous studies and surveys have shown that many of the nation's handicapped are not receiving their fair share of community-supported recreation services, or are not being given enough alternative recreational opportunities. Indeed a study in 1973 of 99 municipal departments in one state showed that of the 72 that responded, although 50% were providing some services, most of those were for the mentally retarded or for senior citizens but with inadequate paid leadership. Moreover, when asked about their responsibility in providing recreation services for special populations, 42 percent of the respondents did not feel obligated to serve special populations. Several departments did provide some paid leadership but relied heavily upon other health and welfare agencies for leadership. Only one department provided full-time paid leadership on a year-round basis." (20)

The Recreation Center's experience, however, indicates that the interest of Municipal Departments in assuming responsibility for the handicapped is growing rather rapidly. It now appears to us, through our participation in national, state and local conferences and seminars and from exchange of information about programs, requests for consultation, information and materials from professionals around the nation, that many of the old barriers to starting programs are disappearing. Several years ago, professional consultants, researchers and practitioners described the main barriers as lack of staff members with adequate training and experience in recreation for the handicapped; the fact that Municipal Departments are geared to mass programs and to the gross statistical records needed for annual budgeting, whereas the need for attention to individuals and small group needs mades handicapped programs more costly. Other barriers were architectural, transportation, accident and liability insurance, and severe physical disability. (21)

At the National Forum on Meeting the Recreation and Park Needs of the Handicapped" held last August, 1974, twelve key problems were discussed, some of which parallel those defined several years ago. They were as follows:

(1) Segregation vs. Integration of the Handicapped in Programs.

(2) The Role of the Voluntary Health Agency in Recreation, Programing for the Handicapped, and its effect on the responsibility of the community recreator.

(3) How important is it to have specially trained therapeutic recreators conducting recreation programs for the handicapped?

(4) Architectural barriers.

(5) Legislation affecting participation of the handicapped in recreation programs and facilities.

(6) Financing Recreation Programs.

(7) The effects of disabilities on non-handicapped participants: a problem of attitudes.

(8) Insurance costs - fact or myth?

(9) Recreation as a rehabilitation tool.

(10) The value of consumer input into recreation planning and design.

(11) Employment of the handicapped in recreation and park work.

(12) Transportation. (22)

B. Some Municipal Programs:

While many Municipal Departments are still concerned with some or all of these problems (additional facilities or resources, transportation, etc.), significant numbers are developing and expanding programs for the handicapped. Following are only a few examples of departments that are breaking down the barriers to providing community recreation for the handicapped:

1. San Francisco - A Special Division for Handicapped Services: Purchase of Services from a Private Recreation Center for Severely Handicapped.

Creation of a "Special Services for Handicapped Division" for Municipal Departments is a new concept. The San Francisco Recreation and Park Department employs 10 full-time staff in this Special Division, funds for which have been allocated in the regular budget. Programs for the mildly mentally retarded and handicapped are conducted at four community centers, three playgrounds, swimming pools and the Junior Museum with over 300 currently participating. These are persons who can use public transportation to reach the programs on their own and many of them are "graduates" of the Recreation Center for the Handicapped. The ten recreation leaders and playground directors from the Department are assisted by qualified volunteers. An Advisory Council, consisting of representatives from voluntary public and private health, education, recreation and welfare agencies, assists the staff in coordinating services, public information and education, in recommending recreation programs, conducting conferences and in studying needs. The San Francisco Department also purchases recreation services on a contractual basis from a private recreation agency -- another unique concept. Services for severely handicapped and mentally retarded who are presently unable to participate in regular programs with the non-handicapped, and who must be transported to and from all programs, are purchased from the Recreation Center for the Handicapped.

2. Los Angeles Recreation and Parks Department, has a Handicapped Section similar to San Francisco's. Programs are provided five days each week for all types of handicapped and all ages. Programs are conducted at Community Centers and offer opportunities for:

* Creative Expression

* Intellectual growth

* Social involvement

* Positive reinforcement

* Emotional release

* Morale building

* Physical activity

* Stimulating new interests and renewing old ones.

To be effective in meeting the needs of all handicapped, the Los Angeles Handicapped Section has four primary objectives:

1. To encourage and assist recreation personnel in the development of leisure services for the handicapped in their own communities.

2. To provide recreation personnel with information concerning the leisure needs of the handicapped in their communities.

3. To assist in providing qualified individuals as program leaders.

4. To disseminate information concerning new and on-going handicapped programs. (23)

3. Washington, D. C. (24)

An outstanding municipal recreation program for the mentally retarded and physically handicapped, which could certainly serve as a model for other communities, is that of Washington, D. C. It was initiated in 1962, when the Recreation and Park Department operated a Summer Day Camp for the Mentally Retarded funded by the Kennedy Foundation and Civitans International, Inc. A survey to determine the numbers of mentally retarded in the District of Columbia disclosed there were 7,000 in a total population of approximately 764,000. A Director-Coordinator of Mental Retardation Programs was employed in 1964 by the Department to assume overall responsibility for program development and staff training. During the latter part of 1965 the budget requested for recreation for the retarded was approved by Congress. Since then, the Department's program has developed rapidly:

- It now has an enrollment of over 3,500, ages 3 to 60 years with such impairments as mental retardation, orthopedic and health impairments, deafness, mental illness, blindness and terminal illness. Approximately 75% are moderately to severely disabled, 15% profoundly; 10% mildly.

- Recreation programs are conducted year-round in eight Centers, six days a week; three summer day camps are conducted for nine weeks.

- Programs are primarily sheltered, but participants are encouraged and counseled to become involved in non-sheltered programs. Activities include arts and crafts, music, dance, drama, self-care skills, bowling, modified games and sports, Special Olympics, wheelchair sports, and trips and excursions into the community.

- Forty-eight full-time recreation personnel, high school work-study students, cooperative education students and undergraduate and graduate student interns plus additional summer staff conduct the programs with the help of many volunteers, primarily from high schools and universities. The staff is guided by an Advisory Committee of professionals in the field of recreation for the ill, disabled and handicapped, and by a Parent's Council.

- A year-round staff development program is conducted which includes the following types of training: on-the-job; in-service; college and university; and conferences, workshops and seminars.

- Transportation is provided by the Department, utilizing seven buses, five full-time and three part-time drivers. The D. C. Public School system provides transportation for the Recreation Department's summer day camp programs.

- The programs are financed through funds from the Department, local service clubs, community organizations, parents' clubs and individual citizens.

- A new recreation center for the mentally retarded and physically handicapped is currently under construction on a six acre site. The 20,000 sq. ft. building includes a swimming pool, gymnasium, auditorium, arts and crafts, staff offices and activity rooms for pre-school and day care. A large outdoor area will provide space for bicycle trails, horseshoes court, putting course, softball field, paved play areas, outdoor classes and picnics.

4. Wilmington and Raleigh, North Carolina

The slogan adopted by these cities is "It's the Ability Rather than the Disability that Counts." Wilmington provides recreation programs for special populations that serve all ages and all types of handicapped and retarded children and adults. After-school programs and summer camping for exceptional children are conducted. The facilities used are community centers of recreation and park departments, churches, schools, Y.W.C.A., etc.

The Raleigh program, "while maintaining its broad scope, meets and deals with disabled individuals at their own best levels in order to encourage them to develop to their own fullest potential." (25) This program serves over 600 participants. Activities have included wheelchair basketball, cheerleading, Boy Scouts, physical fitness, creative dance, swimming, trips, Special Olympics, and Day Camp.

5. Miami, Florida

Besides providing a comprehensive year-round recreation program for the handicapped, this city has a unique training program that prepares handicapped adults for full-time positions in the field of parks and recreation. The program recently received recognition from the President's Committee on Employment of the Handicapped. Twenty-five recreation programs, six days a week serve over 400 handicapped children and adults. Summer programs are also offered to exceptional children, in cooperation with other community agencies including the Community College, Department of Continuing Education and voluntary agencies concerned with the needs of the handicapped. (26)

6. Philadelphia, Pennsylvania

"A Special Place for Special People" -- the Carousel Recreation Center for the Handicapped is sponsored and operated entirely by the municipality but 36 agencies cooperate in the program. Year-round recreation and day camping is provided for children, teens and adults of all races and types of handicaps, including the multi-handicapped. Over 750 of them participate weekly in a variety of activities. The Carousel Recreation Center, located in a park, was formerly a police station. It has been renovated with architectural barriers eliminated so that it is completely accessible to the handicapped. All facilities are located on one level, including a large social hall with a stage, a craft room, two multi-purpose rooms, a game room, lounge, infirmary, offices and kitchen. Special activities are held at the day camp site and play area immediately adjacent to the Center. A nearby indoor pool is used for swimming.

The 36 agencies dealing with various kinds of handicapped persons that are cooperating with the Department in the program, are the primary referral sources. Transportation is provided primarily by two Sunshine Coaches and one minibus, both donated by the Variety Club of Philadelphia.

The Center serves as a laboratory for graduate and undergraduate students from universities and colleges throughout Philadelphia. They spend a full semester gaining practical experience. Programs are operated six days each week, from 10:00 a.m. to 10:00 p.m., Monday through Friday, and 10:00 a.m. to 4:00 p.m. on Saturdays. (27)

7. San Jose, California

San Jose is an excellent example of how a municipal department can expand its services to the handicapped by using Federal funds on a matching basis through the sort of contractual arrangement previously described. Since 1964 the Department has conducted some programs for the handicapped, minimal at first, but gradually increased. In 1971-72, as a result of studies and research conducted in the community by staff and graduate students from San Jose State College, the Department committed itself to the development of a comprehensive city-wide program of socio-recreative services for the handicapped. A Social Services Section and a Therapeutic Unit were established to (1) study the needs of the handicapped; (2) analyze the results of the research already gathered; and (3) implement programs to meet the Department's goals and objectives for serving the needs of the handicapped. Programs were started in priority and to the extent to which city funding was available. Community involvement was found to be essential, to educate the public about the nature and needs of the handicapped, and then to develop acceptance and understanding through socialization and interpersonal relationships. That is, it was necessary to encourage the public to volunteer and assist with programs, thereby fostering community pride and a sense of contribution. One of the Department's top priorities was day care and activity programs for previously institutionalized retarded and handicapped adults residing in Board and Care homes in the San Jose area. Eligible participants were those receiving public assistance from the County Department of Social Welfare Services who needed services in a protective setting. The recreation department's proposal for financial support of this program was approved by the County Social Services Department for the purchase of services under contract, the contract to operate with Federal matching funds on a per capita cost basis covering 100 to 600 adults. Objectives are to develop and improve:

(1) Peer group relationships;

(2) Independent living skills;

(3) Socialization skills;

(4) Community and home living adjustment;

(5) Self-help skills.

Programs are conducted in a variety of community facilities, including churches, and operate daily, seven days a week.

The San Jose Recreation Department works cooperatively with and supports or receives support from over 28 community agencies. In addition, 25 professional consultants serve in their area of expertise on a volunteer basis. In addition to funding from Health, Education and Welfare, the Department is exploring other potentials such as private foundations, Federal and State grants and other agency contributions. The Department is also attempting to develop a large volunteer program to supplement the paid staff. (28)

8. Northern Illinois

The Northern Suburban Special Recreation Association, a unique organization, is an excellent example of how several cities have combined efforts to serve the handicapped. In 1969, a new law called for associations of park districts and/or municipalities of less than 500,000 to provide recreation programs for the handicapped. Nine communities formed NSSRA: Glencoe, Glenview, Highland Park, Highwood, Kenilworth, Northbank, Wilmette, Winetka, and Northfield. The NSSRA deals primarily with school age children but is also concerned with adults. The Board of Directors is comprised of representatives from each member district. Each district provides facilities, local publicity, financial aid and many suggestions for various activities. NSSRA is not considered an "extra" program, but rather an extension of each district's commitment to provide comprehensive recreation for its entire population. It works closely with the Northern Suburban Education District to help improve the life of the total child. Programs stress social development of each child in every situation and are grouped with emphasis on "culture", "environment" and "sports". Some are combined, such as Summer Camp, Teen Club, Girls' Friendship Club, and the Child Development Program. Referrals are made to appropriate community resources such as Scouting organizations and resident camps. The staff of NSSRA includes professionals, part-time leaders, and a large number of adult and teenage volunteers. (29)

C. Private Recreation Agencies:

There has been a steady increase in the establishment of private recreation agencies for the handicapped.

In terms of flexibility, they frequently have many advantages compared to municipal agencies. While our own agency, for example, receives financial support from and has worked closely with the San Francisco Recreation and Park Department for 23 years, it has been much freer to pioneer many new ways to operate community recreation programs for the handicapped.

Three outstanding private recreation agencies for the handicapped operating in Ohio and Kentucky, and in Oklahoma and Massachusetts illustrate what can be accomplished.

1. Ohio - Kentucky

   Stepping Stones, an organization of citizens representing five counties in Southwestern Ohio and Northern Kentucky, has planned an extensive recreation program for handicapped persons. Its chief purposes are social adjustment, security, companionship, and fun for each participant. The organization sponsors day and residential camps, winter biweekly swimming programs, as well as other recreational projects throughout the area. Stepping Stones is administered by an executive director, with full-time program and office staffs, but also makes extensive use of volunteers; more than 700 help staff recreation programs, transport participants, and supervise program areas. Ultimate management responsibilities rest with an elected and rotating board of trustees. Stepping Stones is supported primarily by United Appeal. (30)

2. Oklahoma

   The State of Oklahoma has two very successful private recreation Centers for the handicapped: Oklahoma Foundation for the Disabled and the Tulsa Recreation Center for the Physically Limited. Both Centers receive United Appeal Agency support plus voluntary contributions from citizens of the communities. A wide variety of recreational and educational activities (art and crafts, music, drama, parties, games, sports, and swimming) are conducted in specially designed centers, and transportation is provided for all participants in buses donated by service clubs and citizens' groups of the community. Oklahoma City serves over 300 persons, six years old and up; Tulsa serves 1,100 physically handicapped children and adults. Tulsa's recreation Center, especially designed for the physically limited, was constructed and financed entirely by funds donated by the people of that city. (31)

3. Handi Kids King Solomon Humanitarian Foundation for Handicapped Children, Inc., Braintree, Massachusetts, provides recreation and camping programs for severely handicapped children, many of whom require custodial care and are bed-fast. The Foundation owns a "Happy Bus" van which is equipped to accommodate wheelchairs or folding beds. Plans are underway to build a residential facility and camp on a 22 acre site in Bridgewater, Massachusetts. The Foundation's slogan is "Recreation is a Need and a Right". (32)

4. The Recreation Center for the Handicapped

   This Center started as a pilot project in 1952, under a small grant-in-aid. Six physically handicapped young adults were served, in one room of an old abandoned restaurant loaned to us by the City's Recreation and Park Department. Within twenty-three years, the Center has developed so rapidly that it is possible only to highlight and summarize its achievements and present programs. Over these years, we have offered year-round recreation and camping programs to approximately 9,000 handicapped and retarded children and adults, ranging from mildly to profoundly retarded and handicapped and to severely multi-handicapped of all types from infants of three months to adults in their nineties. A few brief statistics will show how a program can mushroom.

PROGRAM CHARACTERISTICS	THEN (1952)	NOW (1975)
Enrollment:	6 young adults	1300 enrolled, all ages, all handicaps, with a waiting list of 46.
Programs:	3 days each week, 6 hours per day	6 days each week for 13 hours per day
Facilities:	The use of one room and main hall	New facility on a wooded 5-acre site, with special designs for the handicapped 18,000 sq. ft. The therapeutic swimming pool (currently under construction) has 11,000 sq. ft.
Volunteers:	3 volunteers contributed 192 hrs. of service per month	234 volunteers who contribute 3,500 hrs. per month
Staff:	2 part-time paid staff	48 full-time staff 34 part-time staff
Transportation:	Transportation provided by volunteers, the Red Cross, and the use of some taxicab service, traveling approximately 720 miles per month.	14 vehicles, all donated, that travel 2,200 miles per month each

Parent Participation:	10 parents	An active parents' auxiliary of 470 parents
Meals:	Approximately 12 meals per month served	3,100 meals served per month
Budget:	$5,000 per year, from a Foundation Grant that lasted for almost 3 years	$910,000 per year - supported by voluntary contributions, City Recreation and Park funds, and State and Federal funds.

V. Voluntary Health and Welfare Agencies:

Voluntary agencies associated with the mentally retarded and handicapped have in the past initiated and conducted most of the original community recreation and camping programs that have been established for these persons. Parents concerned with the unmet needs of their children organized such agencies as National Association for Retarded Citizens, United Cerebral Palsy Association, the Easter Seal Society, The American Foundation for the Blind and others. Local, regional and state branches of these organizations have provided recreation and camping programs for their clients, and have also stimulated interest and encouraged communities to assume responsibility for these programs.

1. NARC

In the early 1950's, The National Association for Retarded Children was the major agency in providing camping programs for the mentally retarded. Currently, NARC sponsors over 250 day camps and 200 residential camps in addition to other recreational activities. One of its goals is to work with local public and private recreation programs.

2. UCPA

United Cerebral Palsy Association initiates and sponsors community recreation programs for Cerebral Palsied individuals, and also provides transportation.

3. The National Easter Seal Society for Crippled Children and Adults

In 1974 this society provided some type of community recreation service for 8,249 handicapped individuals in eighty-five on-going programs. Typical activities were social clubs and swimming programs. Major programs are being offered in 18 communities. (33)

4. Boy Scouts, Girl Scouts & Camp Fire Girls

Boy Scouts, Girl Scouts and Camp Fire Girls have for many years conducted community recreation and camping programs for the mentally retarded and handicapped. Large numbers of mentally retarded and handicapped boys and girls belong to Scout units in various communities throughout the nation. Scouting handbooks for the mentally retarded and handicapped have been published by these associations. National Jamborees are held for handicapped Boy Scouts.

5. The Y.M.C.A.s

Many of the Y.M.C.A.s are active in providing recreation programs for the mentally retarded and handicapped. In particular, swimming and camping have been developed for these groups. An outstanding program in swimming for the mentally retarded has been developed by the Longview, Washington, Y.M.C.A. Workshops and in-service training programs are being conducted in Physical Activities and Recreation for the retarded and handicapped. In California, the San Francisco Y.M.C.A. Camp has adapted its facilities to accommodate all types and ages of handicapped from mildly to severely handicapped children and adults. The Y.M.C.A. staff combines its specialists, i.e., nature, swimming, pioneer camping and other specialities with regular staff of the handicapped groups using the facilities. Resident camping programs have been very successful.

VI. Where Are We Now?

The new and creative approaches to recreation programs for the handicapped described above are a mere sampling of what can and is being done. The municipal and private agencies have demonstrated that most, if not all, of the obstacles to conducting municipal recreation programs for the handicapped and retarded can be overcome. A significant number of municipal departments are finding solutions to these problems through a public-private partnership approach. This concept was recommended by the President's Committee on Mental Retardation. The Committee states that:

> "...more public-private partnerships should be developed in program planning, in services and in research for the handicapped and retarded." (34)

This "public-private" concept was used even in the earliest days of the Center's development. Later it has helped demonstrate to public agencies how they can contract for recreation services for the handicapped from a private recreation agency. By now, public-private partnership is an idea whose hour has come. And this partnership is available to us in and from our own communities, from the States and the Federal Government.

Area planning for comprehensive services for the handicapped has stimulated leaders in community recreation programs to assume initiative and leadership in developing activities through public-private sponsorship.

Community recreation leaders are also recognizing the need to work more closely with medical and para-medical teams. They now feel more secure as to the importance and uniqueness of recreation in the total development of the handicapped and retarded. While public-private partnership varies in each community, inevitably some creative recreation programs have been recognized as models. This kind of community involvement is seen by some departments as both necessary financially, and helpful in educating the public to the needs of handicapped persons. Such involvement helps to rehabilitate the handicapped; and when the public volunteers to assist with programs, community pride and a sense of contribution to humanity is developed. Through combined efforts, needs are studied, in-service training of recreation staff conducted, financial support obtained and volunteers recruited.

A. Financing Programs

As we have seen, community recreation programs for the handicapped are being financed through a broad variety of Federal, State and local resources. The Federal, State and local support obtained by the Center over a period of years is considered to be exceptional. However, experience of the Center's staff indicates that the same type of funding is available to communities, and that it can be obtained through consistent campaigning of public education, emphasizing that recreation is a right of the handicapped as citizens of the community. A common problem frequently mentioned by recreation and park professionals is how to justify the proportionately higher cost of these programs, not to mention the need for additional funds to extend their present services to the handicapped. This problem was discussed by delegates to the recent "National Forum on Meeting the Recreation and Park Needs of Handicapped People", mentioned earlier in this paper. Delegates pointed out that, since the Recreation and Park Agencies are responsible for serving all people, and that the handicapped are part of the general public, not matter how large or small a budget may be, a portion must be devoted to serving the handicapped. It was also recognized that while more monies are urgently needed to upgrade recreational services to help departments meet their responsibilities, programing should not be contingent upon special funds for this purpose. To alleviate the problem, the following recommendations were made:

1. "NRPA and AAHPER should continue and expand their efforts in collecting and disseminating information on resources for financing recreation services and programs for disabled persons.

2. "National offices of voluntary health agencies should play stronger advocate roles. They should plan and work together in relation to broad issues such as delivery of leisure services, transportation, job discrimination, research in use of therapeutic recreation as a tool in rehabilitation and habilitation of the disabled.

3. "Newly created Office of the Handicapped in HEW should consider leisure services for the disabled and therapeutic recreation services in rehabilitation and habilitation programs as high priority needs to help insure funding for training, research and direct service from the various federal HEW agencies.

4. "All States should have legislation funded at an adequate level which allows local communities to apply for funds, on an on-going basis, for the development and continued operation of recreation services for their disabled residents.

5. "Disabled consumers should be organized to serve as activist spokesmen to help obtain adequate budgetary support for public recreation services for all disabled residents. Recreation Department Staffs, voluntary health agency staffs, and organized disabled groups, i.e., disabled veterans, social clubs, should work together to organize such activist consumer groups.

6. "Voluntary health agencies and public recreation agencies should pool their resources and work together to provide coordinated leisure and recreation services which will best suit the needs and interests of all disabled persons.

7. "Public recreation agencies should reach out to service organizations, church groups and other local clubs and organizations to obtain their assistance in financing, either through financial or in kind contributions, in developing and operating recreation services for the disabled." (35)

Many voluntary Health and Welfare Agencies are promoting and/or sponsoring community recreation programs for their handicapped clients. The provision of comprehensive services for the handicapped and the retarded at the State and community level has not only helped in financing recreation programs but it has focused on the total-person, rather than on the handicap, which has previously placed such persons into categories with medical labels. Because of State Legislation, voluntary agencies that have specialized in certain types of handicapped to bring attention to the needs of that group, are joining together with other agencies to facilitate comprehensive planning for the total person. Where State Legislation, such as the Developmental Disabilities Act, has provided funding for all types of handicapped and retarded, it has compelled agencies to plan and work together for a continuum of services. This has helped to eliminate overlapping of services and fund raising, and to bridge the gaps in services offered by agencies with vested interests who are reluctant to lose their identity and causes. Private recreation centers for the handicapped are demonstrating that they can obtain a significant amount of financial support from their communities for programing, transportation, and in some instances (Tulsa, Oklahoma, Massachusetts and San Francisco) for a specially designed new facility. The private recreation centers described, as well as others around the nation, are proving that a community can be educated to the recreational needs of handicapped persons, and further, to their acceptance and willingness to support these programs financially.

B. Transportation

The problems of transportation of the handicapped are being solved in a variety of ways. Some departments have allocated funds in their own budgets for purchasing and operating their own buses, while in other departments, buses have been donated by service clubs and other local groups. In some communities, transportation is provided by cooperative agencies, schools, voluntary health and welfare agencies, service clubs and parent groups. Current Federal funding for recreation programs includes transportation which should alleviate some of those problems. Private agencies have been quite successful in obtaining buses, and in some cases through unique methods. In Oklahoma City, a bus was donated to the Oklahoma Foundation for the Disabled by the citizens of the community through trading stamps. A special motorized ramp lifts the wheelchairs into the bus.

Since its inception, our Center has found it essential to own and to operate its own buses to supply transportation for on-going year-round recreation programs for participants unable to use public transportation. The Center started with one bus and gradually added others as we could promote the need and find donors for them. At present the Center owns and operates a fleet of fourteen buses and has twenty drivers for day and evening shifts. Vehicles operate from 7:00 a.m. to approximately 11:30 p.m. They are Maxi-Vans equipped with the necessary straps and special harnesses for holding multi-handicapped children and adults. They all have been donated by various community groups such as foundations, service clubs, men and women's fraternal organizations, our parent auxiliary and by individuals. Painted white and bearing the Center's name, address, its symbol and the donor's name, they have created a great deal of publicity and community awareness for the Center, and have become symbolic of services to the handicapped of San Francisco. As each bus wears out, we now have a donor waiting to replace it.

Through the years of trial and error, the Center staff has learned how to operate and maintain a fleet of vehicles at a very low cost. For example, over 100,000 handicapped participants are transported yearly at a minimum cost of under $2.00 per trip. The very difficult problems of insurance have been solved, and the staff has learned ways to recruit and train drivers.

Because of the Center's expertise in the providing of specialized transportation, many San Francisco community agencies dealing with the handicapped have requested that the Center provide transportation services for their constituents. At present transportation for handicapped clients of six other agencies is provided on a contractual arrangement. These are day care centers, rehabilitation workshops for senior citizens and others.

C. Facilities and Architectural Barriers

The Federal Act of 1968 (PL 90-480) is having a special impact on the construction of new facilities. The Act "requires all building and facilities which are intended for public use and which will be financed in whole or in part or leased with Federal funds shall be designed and constructed so as to assure accessibility and usability by the physically handicapped." All 50 states have adopted corresponding legislation with respect to the use of State funds.

In April 1975 the U. S. Department of Housing and Urban Development published a very comprehensive booklet on "Barrier Free Site Design". The purpose of the publication is to provide one source for both administrators and designers, the necessary information that can lead to designs that consider all persons using the outdoor environment, and to act as a medium for sharing information. It includes laws and legislation, population costs of barrier free construction, recommended design details of both indoor and outdoor facilities and all public areas. (36)

Another new booklet, titled, "Trends for the Handicapped", suggests methods of adapting outdoor recreation facilities so that they can be enjoyed by everyone including severely multi-handicapped persons. It also describes inexpensive ways to offer facilities to more people. (37)

Municipal recreation and park departments are finding that they can conduct programs for the handicapped in their regular community centers, playgrounds, parks, camp and other facilities. Some facilities are being modified to accommodate the handicapped and elderly by installing easily opened, out swinging doors wide enough for wheelchairs, grab bars and level or ramp walkways and curbs. Some communities are also providing special centers for the more severely handicapped individual who needs a temporary sheltered type program, but with the goal of ultimate integration of these persons into regular programs and facilities.

It has been the experience of the Center that most recreation resources in the community can be used for severely handicapped with some adaptations, and that even multi-handicapped bed-fast individuals can use and enjoy regular community recreation and park facilities, as well as camping in outdoor areas, if transportation, sufficient staff and volunteers are provided. Frequently there are vacant or little used facilities in communities that could be modified and adapted for use in conducting recreation programs for the handicapped. For twenty years our Center successfully used a facility which was originally built as a restaurant to accommodate San Francisco's famous, largest outdoor swimming pool, known as Fleishhacker Pool. The building, loaned to us by the San Francisco Recreation and Park Department, was built on two levels, but we were able to convert it into a very usable area even for bed-fast persons merely by installing ramps, grab bars, and easily opened doors wide enough for wheelchairs. The top floor consisted of two large social halls, a stage, library, kitchen cooking area and four activity rooms. The basement area was utilized by connecting a long ramp to the top floor by an opening in the wall which was used for wheelchairs and gurneys. The large area which had been used originally for locker rooms was then converted into six activity rooms with additional space for gymnasium and a portable swimming pool. As the Center continued to expand, even these additional areas could not accommodate the large numbers of severely handicapped in need of our services and the necessity for larger facilities was clearly indicated. The construction of a new Center (described elsewhere in this paper) was a partial solution. However, while the new Center was still under construction the staff found that satellite, (or Outreach), programing could reduce the need for additional facilities and transportation, and serve large numbers of handicapped at a low cost by continuing programs in homes, in neighborhood facilities; such as, social halls, recreation rooms in complexes, YM/YWCA and youth clubs, and recreation and park facilities. The concept for Outreach grew out of an idea to serve severely handicapped persons who were confined to their homes on a permanent, long term, or temporary basis. These ranged from children to the very old, who were too frail or ill, or so retarded or withdrawn that they were unable to interact within the Center group. Recent additions to Outreach are the provision of infant stimulation programs in the homes and a special program for the aging who reside in Housing Authority complexes. The dynamic response to Outreach programs was beyond all expectation and clearly shows the need for continued expansion. Satellite programing points to a new direction in the search for ways to expand services to large groups who can best -- or only -- be served in their neighborhoods and homes.

D. Leadership

1. Professional:

Lack of adequately trained staff is often mentioned as a barrier to municipal recreation programs for the handicapped. The importance of specially trained therapeutic personnel was listed third among the twelve major issues chosen for discussion at the aforementioned National Forum. Though the Summary Report on the discussion indicated that the question was not only crucial but controversial, the main thrust of the final recommendations was clearly weighted towards professional training. "A unified front for the therapeutic recreation curriculum" was the first of three "national level" recommendations and it also led to "University or College Level" list of recommendations. The Forum's summary of delegates' comments, however, showed a considerable body of opinion that to overemphasize the need for professionals to administer all recreation programs for the handicapped was "absurd" and that "most handicapped people are not in need of therapeutic recreation programs". Indeed this minority viewpoint went so far as to "caution municipal recreation and park professionals not to confuse the duties of the therapeutic recreation specialist to include any and all recreation programing for the handicapped."

This latter viewpoint is distinctly in line with the Recreation Center's own experience over its 23 years of growth. The fact is that most departments' operating programs for the handicapped have found that they can make very wide use of their regular personnel.

Some departments provide in-service education programs, using the advice and guidance of public and private community agencies that are dealing with the handicapped.

To cite one representative case, a department trained and oriented 92 leaders from Community Centers, playgrounds and other facilities, in programing for the handicapped. Training included showing films and slides, together with small group and panel discussions, demonstrations of leadership techniques in adapting activities, and actual involvement and experience in working with the handicapped. At the outset, most of the staff expressed strong reservations, and only two or three actually volunteered to work with the handicapped. But after they became involved with a wide variety of handicapped persons, including the severely multi-handicapped, a dozen or more of these community center leaders found themselves comfortable and challenged to begin developing programs both for the handicapped who could fit into their regular programs and for those who needed adaptive activities in a more sheltered setting. Over a period of several years, most, if not all of these leaders have had some exposure to and involvement with the large numbers of handicapped persons who participate in this department's programs. In-service education programs have continued, but attitudinal barriers have been eliminated, primarily through involvement and the experience gained in face to face leadership with handicapped participants.

Fear of serving the handicapped in community recreation programs has developed from the fact that major emphasis has been placed upon the need for highly specialized personnel and a large staff-to-participant ratio. The special needs of the handicapped for specialized programs, for special and expensive facilities and equipment, and sheltered environments have been over-emphasized. This not only discourages and deters many community agencies from initiating programs, but it provides administrators with "an out" for not serving the handicapped. Yet, in conducting community recreation programs for special populations, administrations have frequently affirmed their need for generalists for those, as one person put it, "who can work with teenagers in the morning, handicapped in the afternoon and the elderly in the evening." They further state, that their budgets will not permit the employment of specialists who can work only with the handicapped. Experiences of the Center have indicated that the amount of special knowledge about the handicapped is nowhere near as important as the ability to adapt and lead activities.

At the Center we have found that any good leader of the non-handicapped can also be a good leader with even the most severely handicapped. If he has the skills and techniques for good leadership, he has the imagination to adapt these to the handicapped. Moreover, if the recreation leader is not too involved with the medical and technical background of individuals, he will tend to accept and treat them as participants in a regular recreation program. If he is not hampered and confused by their presumed "limitations", he does not set up mental blocks in his own mind concerning their abilities and potentialities. Frequently, medical opinion on these so-called limitations is inconsistent and continually changing.

In line with this insight, we have also found that those with skills in special areas -- music, drama, dance, physical fitness, arts and crafts, etc. -- are also exceptional leaders of the handicapped in these areas. Their skills are much more important than a great deal of training about handicapping conditions. A recent survey of some municipal and private agencies conducting programs for the handicapped, asked for a list of the skills, knowledge and competences most needed for specialists working with the handicapped. The list parallels those that the Center staff believes are important. It should be noted that the same skills are needed in leading recreation programs for "normal" people. Among them are:

(1) Group Leadership Skills. Activity Skills (art, music, drafts, games, dance, drama).

(2) Program Development: Long-term planning.

(3) Community Awareness: Political Awareness How to cope: Know the system; Federal, State, county, city, private agency. Know your resources, hierarchy of systems: Community organization.

(4) Philosophy of recreation.

(5) Interpersonal relations, Communication How to motivate, Time management, Public relations.

(6) Theory of play/dynamics of play.

Our most outstanding leaders have been those who are skilled in certain areas of activity, have the imagination to adapt, but have less knowledge of the medical and psychological problems of the handicapped. Our experience also shows that usually the most successful leaders in community recreation for the retarded and handicapped are those with professional training and experience in general community recreation with the non-handicapped. If these persons have been indoctrinated in the basic philosophy, goals, principles and standards of community recreation for all citizens, they can readily apply these concepts to serving the handicapped.

Ideally, all persons trained in the field of recreation should also have studied recreation for special populations. This has been recommended as follows:

> "All college and university curriculums should have at least one course in recreation for special populations which all recreation and park majors are required to take." (37)

In addition, it is strongly urged that these colleges and universities develop guidelines for municipal departments for training and orientation of the vast numbers of leaders who are already working in community recreation and who could and should be developing programs for the handicapped. These guidelines should emphasize similarities, rather than differences, among populations, programs, and activities.

Employment of the handicapped themselves in both public and private recreation agencies is increasing and has proved very successful. Municipal Recreation and Park Departments and/or private agencies employing handicapped professionals in their programs have a built-in resource with special knowledge of what the needs of handicapped persons are. They should be represented in all phases of planning for programs and facilities. The Recreation Center for the Handicapped employs physically handicapped and mentally retarded in the business office and in the recreation program.

a. Consultants and Advisers

Some municipal recreation and park departments have established permanent Advisory Committees whose members are drawn from local voluntary agencies. These committees assist the municipal staff in coordinating services, public information and education, recommending recreation programs, conducting staff training sessions, and studying needs. The Municipal Recreation and Park Department in San Francisco, California, has made effective use of the Advisory Council to its Handicapped Division. This support has enabled the Department to provide and expand programs for the handicapped throughout the City. In San Jose the municipal department works cooperatively with and/or receives support from 28 community agencies. The department also receives professional consultation (on a voluntary basis) from 25 experts within the community.

Private agencies also rely heavily upon community consultants. For example, our Center staff is assisted by an Advisory Team which has been assigned from the Community Mental Health Services. The Team includes a psychiatrist, social workers. a rehabilitation counselor, a school psychologist, and a clinical psychologist. Team members meet as needed, with staff who work with children, teens and adults. In particular, they assist the staff with individual and/or group behavior problems of children, parent counseling, information and referrals to other community resources including basic medical care, school and development center placement, vocational rehabilitation and neighborhood recreation and day care programs.

b. Adult Educators

Some municipal departments, as well as private agencies, are able to supplement their recreation staff by using adult education instructors and specialists provided by the community college district. The San Francisco Community College District provides four of these specialists to our Center, each for twenty hours per week. Their skills include art, music and dance, basic composition and reading and Braille, plus staff training and development.

2. Volunteers

Volunteers are essential to all community recreation programs for the handicapped to supplement the paid staff. They range from high school work study students, teens from youth-serving agencies, cooperative education students, to graduate and undergraduate interns, business men and women, parents, the handicapped themselves and many other interested individuals and groups within the community.

For private recreation agencies, dedicated community volunteers are the "backbone" of the agency. In particular they are needed for Boards of Directors and Advisory Boards. From our experience, we believe that every community has dedicated volunteers, willing and eager to help either in direct services or through contributions, and that many often are seeking an agency to support even though they may never have been involved before with a handicapped person. The success of the Center's program is due largely to the dedicated and devoted business men and women serving on its Board of Directors. They frequently express their appreciation that they are involved in a worthwhile endeavor. Through standing committees, they raise funds for the budget, handle problems of transportation and insurance, help to recruit personnel and other volunteers, promote the Center through publicity and a Speakers' Bureau, review legislation for possible sources of funds, obtain needed equipment and supplies, assist with grant applications for federal, state and local funds, and are in contact with the local government associated with contractual services for the Center.

Many departments and private agencies have found it essential to have part-time or full-time paid volunteer coordinators For several years, the Center has found it necessary to employ a full-time volunteer coordinator to recruit and train the many and varied community volunteers and field work students that contribute so much to the overall program.

E. Programming

Programs conducted in community settings vary greatly in types of activities, numbers, ages and types of handicapped served and frequency of programs. Most programs are conducted several times each week, year-round. Some municipal departments are integrating handicapped and non-handicapped in regular programs, some are conducting sheltered programs for the handicapped in community centers, playgrounds, camps and other facilities, but with the ultimate goal of integration with the non-handicapped. Others, as in Washington, D. C., have also designed special centers for the severely handicapped who need adaptive programs to help them to progress toward greater social independence and eventual participation in integrated programs, with confidence and increased skills.

The normalization and mainstreaming principles have caused community recreation programs for the handicapped and retarded to be more concerned with helping the whole person to be totally involved in the community wherever possible. Thus, opportunities are being provided for the handicapped to participate with the non-handicapped wherever he can do so successfully. If he can participate in certain games and sports with the non-handicapped, but not in drama, he would be placed in programs with the non-handicapped part of the time and with the handicapped part of the time.

Separated and integrated programs for the handicapped will both continue to be needed but the emphasis should always be placed on ultimate integration with the non-handicapped in all community recreation programs.

The segregation-versus-integration issue was thoroughly discussed at the August 1974 National Forum on Meeting the Recreation and Park needs of the Handicapped. It was concluded that "integration-segregation was not an either-or issue but integration is the ultimate goal. Segregation is acceptable only if it is appropriate to the developmental growth of the individual at a specific point. Separate but equal facilities are never an acceptable objective. A statement of principle was adopted as follows:

> "All disabled citizens, each according to his/her individual ability, shall be guaranteed access to recreational programs, activities, and/or facilities which are held forth to be 'public'. (By public is meant both tax-supported and publicly used but privately owned.)
>
> "These programs, activities, and/or facilities shall be planned, altered, renovated and operated in whatever manner is deemed necessary to maintain this principle.
>
> "These programs, activities and/or facilities shall encompass and include endeavors which are active and passive, skilled and unskilled and which can be performed on an individual and/or group basis." (38)

VII. Conclusions To Be Drawn From The Center's Experiences

During its entire 23 years, the Center has followed the principles of programing outlined above, for multi-handicapped children and adults of all ages, many of them not normally seen in community recreation programs. They have included all types of physically handicapped, emotionally disturbed, mentally retarded and mentally ill. Many are in wheelchairs or on crutches, some (especially children) are confined to cribs or beds. Some are subject to convulsive disorders, and a large number require custodial care such as feeding, diapering and toileting.

Two basic policies have guided the Center since its inception:

(1) Any handicapped person is eligible for its services. There are no eligibility restrictions.

(2) The needs, interests and abilities of the handicapped have determined program design and scope. No one therefore has been or could be excluded on the basis of not being suitable for some part of the program.

Holding consistently to these two basic principles, the Center has always received enough community support to keep pace with the growing demands for service. Its program has evolved from the staff's direct experiences in working with the handicapped. In effect, the handicapped themselves have been the teachers by expressing and demonstrating their needs and potentials. With a basic background in recreation, the staff has needed only to be interested, alert and flexible in working with the handicapped, recognizing that their basic needs are the same as for the non-handicapped, and that a perception of their individual differences and abilities is essential.

In organizing and conducting recreation programs for all ages and types of handicapped and retarded individuals and groups, the Center has continued to operate by the same philosophy and standards as those that underly community recreation. Emphasis has been placed upon achieving the goals of all recreation: personal fulfillment; democratic human relations; leisure skills and interests; health and fitness; creative expression and aesthetic appreciation. Specific objectives are based upon the interests, desires and needs of individual participants that will help them to progress toward greater degrees of social independence, physical well-being, emotional stability and intellectual advancement. In addition, Center leaders must take into account the lack of previous opportunities for social relationships and for recreation programs in general. The general objectives of the program may be listed as follows:

* To provide opportunities for creative use of leisure time for those handicapped and mentally retarded individuals who are presently unable to participate in recreational activities with non-handicapped groups.

* To provide activities that assure each individual, regardless of the handicap -- a chance to participate actively; thereby encouraging him to accept his handicap and establish a possible capacity for social integration in his own community.

* To encourage various means of self-expression through adapted recreational activities and to provide instruction in the techniques and skills necessary for each individual to find recreational satisfaction.

* To provide a variety of opportunities for investigation and continued application of learning experiences. To motivate each individual to discover his own latent abilities and potentialities, and to discover interests which he continues to pursue during his leisure time at home and throughout his life.

* To foster the growth of independence and self-direction in each individual, regardless of his limitations, and to enlarge and deepen personal interests.

* To enrich and strengthen family life, and particularly to show parents the potential abilities of their handicapped child.

Over the past seven years, the Recreation Center has clearly demonstrated that many handicapped and retarded can be helped to enter regular community programs. Two multi-handicapped groups have shown such improvement:

* 750 multi-handicapped children not accepted by any school. To date 550 of these children have improved sufficiently in physical, social, emotional and self-held skills and general maturation to be accepted in City schools for the retarded or orthopedically handicapped, in special classes in the regular schools. In some dramatic instances, they have been able to enroll in the regular classes in regular schools.

* 600 severely retarded young and older adults who were recently returned to the community from State institutions. To date 312 have developed sufficiently in self-confidence and in social and self-help skills to "graduate" from the Center into municipal recreation and park programs, youth centers, and other recreation programs in the community. Twelve have found jobs in the community and ten are serving as Program Helpers in the Center's Workreation Program.

Approaches and Techniques:

The Center's staff believes that the influence of recreation activities on learning abilities for the handicapped and the improved mental, physical and social development previously described is derived not so much from the activity itself, but more through the techniques used to conduct the activities. Some of the practical approaches that recreation leaders at the Center have found to be most successful:

* In program planning, the normal child or adult is used as a frame of reference. This assumes that even the most severely handicapped person can benefit from, and should be able to use all recreation and community resources available to other children and adults. Therefore, the Center staff takes the children and adults to public

parks and playgrounds, museums, the airport, concerts, theatres, restaurants, and shopping centers in order to participate with normal persons. Profoundly multi-handicapped retarded have been taken on cable car rides, bus rides, elevator rides, snow trips to Squaw Valley where they spent their first night away from home, trips to a farm, and wilderness camping in the High Sierra. Severely physically-handicapped (not retarded) as well as retarded adults have taken trips to Las Vegas where they enjoyed the night spots and gambling.

Other activities, especially planned for integrating handicapped and non-handicapped are:

(1) The Staff works with playground leaders and directors for participation of groups in City-wide events, such as, May Day Festivals, Carnivals, City Day Camping, etc.

(2) The use of community groups, i.e., Scouts, Y.M.C.A.s, Churches and Youth Clubs for social activities and exchange programs. For example, non-handicapped teenage clubs participate in dances at the Center, and handicapped Center groups are invited to Church dances.

(3) Working with neighborhood groups to integrate individuals into regular recreation and day care programs.

(4) Conducting large events for families, such as holiday parties, carnivals and picnics where siblings attend and participate with the handicapped.

(5) Conducting special events, i.e., Western Round-Up, where the total community is invited to participate in square dancing, cook-outs and other activities.

* Leaders frequently use what they call the "as if" approach. For example, they plan programs "as if" there were no retardation; in most cases, the extent of retardation is not known anyway. The excitement in programing this way is in not knowing who will be reached and to which method or activity the children will respond.

* Emphasis continues to be placed upon the need for new methods, approaches and techniques to stimulate and motivate the handicapped and retarded, particularly those who have previously been isolated all their lives in State institutions, or children who have vegetated in their cribs from eight to ten years. Some practical approaches we have found to be important are:

(1) The staff is not afraid of hurting a child in rough and tumble activities on indoor mats or on grassy outdoor meadows. Even bedfast children are given the opportunity to ride "piggy back" and to wrestle with the leaders on the floor or the grass. This kind of activity was found to be usually lacking in the home, but we consider it part of good play experience. Children who have been confined to their cribs most of their lives have learned to sit up and to stand and walk as their muscles gradually strengthen in physical activities such as these.

(2) A new concept is called Compatibility Grouping. Grouping is achieved primarily by chronological age, combining all types of multi-handicapped. For example, children and adults who have the same type of handicap such as cerebral palsy, mental retardation or emotional disturbances are not grouped according to handicap, but by chronological age, compatibility, social level and individual need. We have found that recreation programs that include all types of handicapped help to demonstrate the values of treating each one as an individual, rather than to hand out group and medical labels such as CP's, MR's, MD's and MS'es. Groups are not labeled in this way but names are selected by the participants, such as, The Moonbeams; Little Rascals and Polliwogs.

(3) The handicapped and retarded learn more by being actively involved. For example, when a child squeezes water with a sponge, or uses an egg beater in soap suds in kitchen utensil play, one can see that he develops a longer attention span and that he gains self-confidence and self-esteem by mastering the manipulation of these materials.

(4) The staff is aware that a lot of learning takes place through sensory experiences. Therefore, sensory experiences are not taught, but LIVED daily. Children and adults learn the smells and tastes of food -- oranges, onions, tuna, peanut butter -- through cooking or preparing lunch and dinner at the Center. On nature walks to the camp site, the beach and zoological gardens, they are given many opportunities for living sensory experiences. During the Sound, Feel, Smell and Sight walks, they are encouraged to identify the sound of a squirrel, a bird, or waves on the ocean. They feel a pine cone, a rock or a shell and smell the salt air of the ocean, burning wood, or the fragrance of a wild flower.

Some of the practical learning experiences enjoyed most by previously institutionalized retarded are:

* Trips to the Zoo, where they learn to identify animals.

* Walks through neighborhoods, where they see different types of houses, flowers and trees, shopping centers, lunch counters, ice cream parlors, automobiles and a nursery.

* Learning to use public transportation, recognizing the number of a bus, after they have learned to read.

* Home-making skills: cooking and sewing, identification of cooking utensils, table setting, proper manners while dining, proper use of knives, forks, etc.

* Health education: personal grooming, make-up, hair styling, proper clothing. Men have learned how to shave, to comb their hair, brush their teeth and to shine their shoes.

* Learning to read and to write, to count, to tell time, and to talk on the telephone.

* Developing hobbies that can be enjoyed at home: card games, knitting and crocheting, scrapbooks, and leather craft.

* Physical fitness - learning how to swim, to run and jump, to take part in Special Olympics in the local community.

* Cultural activities - learning the culture of a country such as Japan, France or Mexico.

* Drama and theatre - plays and productions that can be presented at the Center and in the community. "The Little Prince", a performance by Center teen-agers, was presented at City College and San Francisco State College for Special Education and Recreation majors, other students, and for retarded and handicapped students in local schools. The cast consisted of blind, severely retarded, emotionally disturbed and physically handicapped but not retarded. "The Emperor's New Clothes" was recently produced at the Center's new facility by the Drama Specialist. The cast consisted of profoundly retarded who gave an outstanding performance and clearly indicated that with creative leadership they could participate successfully in all forms and types of recreation activities.

- Service Projects - making items for Children's Hospital, i.e., trays, planting succulents; making pottery items for a home for the elderly.

It is hoped that this chronicle of the Center's experience, together with that of many other recreation programs across the country, will reinforce the point made at the outset of this report. Successful recreation programs for the handicapped, including the multi-handicapped, can and have been carried out for many years now without highly-trained therapists. Moreover, recent legislation has helped surmount many of the traditional barriers, including funding so often referred to by many professional recreators.

Priority Needs

In keeping with the recommendation that advocates, "... a moratorium on study, research and learned talk, especially on the part of those who limit themselves to the special needs and special diagnoses of different types of handicapped..." the following priorities focus entirely on service needs in recreational programing for impaired, disabled, and handicapped persons. Because of differences in 1) levels of program development, 2) sophistication of personnel, and 3) community involvement, no delineation has been made in terms of high, mid or low levels. Each reader is to determine importance of these priorities according to specific conditions and circumstances in the particular community or municipality being served.

- Disseminate materials about existing studies, models, demonstrations, guidelines, and philosophical concepts as bases for personnel in communities and municipalities to initiate and/or expand recreation programs and activities for impaired, disabled, and handicapped participants.

- Disseminate information and materials about ways personnel in communities of all types and sizes can tap existing potential and resources to initiate and/or expand recreation services for impaired, disabled, and handicapped persons. Use successes and experiences of other communities and municipalities as an important part of this process.

- Develop approaches and strategies that emphasize similarities among all people including those with specific handicapping conditions as opposed to overemphasis on special needs, specialized programs, extensive and expensive equipment, sheltered environments, and highly trained specialists.

- Emphasize importance of basic and fundamental recreational skills and competencies as bases for successful involvement of recreational personnel in community programs and activities designed to meet needs of impaired, disabled, and handicapped persons.

- Ensure and increase active consumer participation in all aspects of recreational programing especially at policy and decision making levels. Encourage more consumers to seek recreational leadership positions.

- Mobilize and utilize the vast reserve of local citizens and resources to assist in supporting and providing services, recreation programs and activities for impaired, disabled and handicapped persons.

- Emphasize greater use of all available resources in meeting needs and priorities at local and state, as opposed to national levels.

- Attain greater coordination and cooperation among groups and agencies interested and involved in recreation programs and activities in general and for impaired, disabled, and handicapped persons in particular.

- Become involved in early childhood education programs as part of comprehensive service teams.

- Emphasize role of recreation in social development, vocational preparation, and occupational productivity of impaired, disabled and handicapped persons.

- Obtain funds available through state and local revenue sharing sources to support these programs.

- Develop transportation systems to meet unique needs of communities and municipalities and disseminate information and materials about successful models.

- Encourage NRPA and AAHPER to continue and expand efforts in collecting and disseminating information on and materials about resources for financing recreation services and programs for impaired, disabled, and handicapped persons.

- Encourage national offices of voluntary agencies to play stronger advocate roles in planning and working together in relation to such broad issues as delivery of leisure services, transportation, job discrimination, research in use of therapeutic recreation as a tool in rehabilitation and habilitation.

- Encourage Office of the Handicapped, Department of Health, Education, and Welfare to consider leisure and recreational services for impaired, disabled, and handicapped persons as high priority needs in rehabilitation and habilitation programs and to help ensure funding for training, research, and direct service from various HEW agencies.

- Encourage personnel in all states to support legislation funded at adequate levels to allow local communities to apply for funds on an ongoing basis so that each can develop and provide recreational services for impaired, disabled, and handicapped persons.

- Encourage voluntary health agencies and public recreation agencies to pool resources and work together in providing coordinated leisure and recreation services which best suit needs and interests of all impaired, disabled, and handicapped persons.

- Encourage public recreation agencies to reach out to service organizations, church groups, and other local groups and organizations to obtain assistance in financing either through financial or in kind contributions in developing and operating recreation services for impaired, disabled, and handicapped persons.

- Make sure that federal, state, and/or local laws mandating barrier free design are interpreted and applied to all public facilities and programs including parks and recreation.

- Make necessary modifications of existing recreation facilities so that each can be fully utilized by every individual, including severely physically impaired, and multiple involved individuals.

- Implement in-service programs for regular recreation staffs to develop appreciation, understanding, and competencies for meeting needs of impaired, disabled, and handicapped persons through regular and special recreation programs.

- Disseminate success stories especially those that differ with theory.

- Emphasize recreation, leisure, and park services as a basic right of every individual and responsibility of every community.

- Extend right to education and right to treatment legislation and litigation to right to community services so as to include recreation, leisure, and park services.

- Be sure provisions for recreation and leisure for impaired, disabled, and handicapped persons are integral parts of all related state plans such as outdoor recreation, developmental disabilities, and mental health-mental retardation.

- Place greater emphasis on meeting recreational and leisure needs of young adult, adult, and geriatric impaired, disabled, and handicapped persons.

- Provide continuum and maintain flexibility in services to meet intent of least restrictive environment provisions in legislation and litigation applied to recreation, leisure, and park programs, activities, and services.

- Incorporate school-community concepts and procedures to extending and expanding recreational services to impaired, disabled, and handicapped persons.

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CREATIVE ARTS (ARTS, CRAFTS, DANCE, DRAMA AND MUSIC) FOR PERSONS WITH HANDICAPPING CONDITIONS*

State of the Art

The Creative Arts are a rather broad program area which include activities in art, crafts, dance/movement, drama, and music/rhythms. As a medium of expression and means of self-actualization, activities of this nature are gaining enormous popularity. Search of the literature reveals that creative arts are used quite extensively with persons having various handicapping conditions.

However, a major issue surfaces when examining this information--no clear, universal definition as to when an activity is considered educational, recreational or therapeutic was found. With the added concept of therapeutic recreation, overlap in activity objectives is even more apparent. For example, therapeutic recreation is a process which utilizes recreational services for purposive intervention in some physical, emotional, and/or social behavior to bring about a desired change in that behavior and to promote growth and development of the individual. Education too is a process to bring about change in behavior and to promote growth and development of an individual. Furthermore, the educational process is no longer limited to acquisition of knowledge and factual information but encompasses development of an individual in all domains--cognitive, psychomotor, and affective.

Perhaps no clear-cut distinction can be made among various activity modalities and adjunctive therapies. What might distinguish one from the other is the primary objective of an activity and the setting in which it takes place. However, objectives may be interchangeable depending upon the extent of involvement of the participant and goals of the leader/teacher/therapist.

An equal amount of confusion exists within specific creative art therapies themselves--art, dance, music, and psychodrama. In discussing art therapy, Kramer (1972a) emphasized art as therapy rather than psychotherapy using art as a tool. Throughout the literature it is not resolved whether art, dance, and music therapies and psychodrama are the former or the latter. However, McDermott (1954) delineated four forms of art therapy: (1) diagnostic where character disabilities are found through student drawings and craft work, student mannerisms, and student relationships with other students and teachers, (2) analytic which attempts to find what is wrong with the patient and to remedy the problem, (3) self-expressive which places emphasis and hope on making the individual mature because of achieving success in self-expressions, and (4) combinations of the three other forms.

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*A guide, MATERIALS ON CREATIVE ARTS (Arts, Crafts, Dance, Drama and Music) FOR PERSONS WITH HANDICAPPING CONDITIONS gives detailed analysis of selected research and program literature concerned with creative arts for impaired, disabled, and handicapped individuals. Available from AAHPER Publications Sales (1201 16th St., N.W., Washington, D.C. 20036), 1975. $2.75.

Research

As with program aids, the greatest amount of research concerning use of creative arts with impaired, disabled, and handicapped individuals has been in the area of music/rhythms. Research in this area was found five times more than any other program area, and with the addition of research in music therapy, six times any other program area. With roughly the same amount of research were art, dance, and drama. The frequency of research per handicapping condition was somewhat more evenly distributed. Studies having the greatest frequency dealt with mental retardation and psychoses; no other condition exceeded ten studies.

While the literature is full of examples of behaviors that can be affected by program activities in the creative arts, less than one-third of research studies dealt with verifying theories. Primary areas researched included:

- Use of creative art activities to bring about change in behavior and/or skill;
- Surveys of use of a specific modality;
- Ability of persons having a particular handicapping condition in a specific creative art;
- Use of a creative art activity as a reinforcer in behavior modification programs; and,
- Specific training in a modality to increase skill in that modality (e.g., rhythms).

It appears that the bulk of this research is directed toward answering questions only relevant to a specific group at a specific time (e.g., Gerard, 1955--A Survey of Music Activities in Schools for the Handicapped in the New England Area) or totally irrelevant to use of creative arts as program activities with the impaired, disabled, or handicapped persons (e.g., Vernetti and Jacobs, 1972--Study to Determine Whether Using Music to Mask Background Noise Would Increase Learning Disabled Children's Productivity).

One group of studies dealt with abilities of persons with particular handicapping conditions to perform successfully in a particular activity. Tyszkiewiez (1972) found an unexpected artistic talent in mentally retarded children. From a study of deaf and aphasic children, Silver (1970) concluded that there was no reason why an individual who had impaired hearing or language should not have artistic talent. Pang and Harrocks (1968) found that deaf participants scored lower than normal subjects in abstract areas, about the same in concrete areas and higher on elaboration. In another study, (Pitman, 1965) blind children scored significantly higher than sighted subjects on musical ability. McLeish (1968) found that average scores of educable subnormal children equaled those of normal groups in tests involving simple auditory discrimination (i.e., pitch, intensity); these scores dropped significantly in more complex judgements involving memory.

In the Weiner and Spero (n.d.) study of creative arts therapy with mentally retarded children test results showed that this type of treatment helped retarded children sharpen auditory and visual reception and association, and refine verbal and manual expression. Silver (1973) showed that art procedures were useful in teaching ideas of conservation, grouping, ordering, and spatial orientation. Minimal brain impaired children made significant gains in visual perception through participating in creative arts programs (Carter and Miller, 1971). While not always significant, positive effects on academic achievement, motor skills, social awareness and certain aspects of art behavior of intellectually handicapped children and youth were noted as the result of an experimental art program (Mills, et al, 1961). Significant improvement was found after art lessons were introduced to increase creativity of emotionally disturbed children (Gallagher, 1972).

Puretz (n.d.) found statistically significant positive improvement in the self-concept of disadvantaged girls who took part in modern dance as a substitute for physical education. Educable mentally handicapped children had significant sensory-motor improvements related to advances in language abilities and visual perceptions after participating in a dance program (Taylor, 1964). Gittens (n.d.) noted significant improvement in visual closure, gross agility, and self concept when a dance program was utilized with trainable mentally retarded children. A dance therapy program with psychiatric patients resulted in significant improvement with respect to hypochondriasis; such progress was not found in other personality traits (Balkus, 1968). Overall individual improvement in self-confidence and adjustment to the group resulted from a recreational drama program with emotionally disturbed adolescents (Fowlkes, 1966).

Comparisons of personal and social behavior patterns of three groups of girls who participated in basketball, choir, or no extramural activity in a state training school revealed that while all subjects deviated significantly from norms on factors such as withdrawal tendencies, nervous symptoms, and antisocial tendencies, scores of the basketball group were superior to both choir and control groups on seven factors (Green, 1969). After participating in music activities, post-respiratory patients exhibited a noticeable and sometimes unusual increase in vital capacity measurements (Brim 1951). Braswell (1970) described a study where music therapy was given to adult rehabilitation clients. No significant differences in either skill in inter-personal relationships or self concept were found but the experimental group ranked higher in vocational potential as measured by motivation and attendance. Increased attention span, greater motivation, and more expressive speech were behavioral results attributed to a music program provided mentally retarded subjects (Levey, 1970). In an 18 week music enrichment program for trainable mentally handicapped students, the experimental group made significant gains on the Peabody Picture Vocabulary Test, while both groups made significant gains in basic knowledge, communication, and social behavior (Wingert, 1972). Seybold (1971) found that musical activities when used with speech delayed children produced significant results.

Analysis of these findings suggest something about how impaired, disabled, and handicapped persons are viewed—not as individuals each with his own interest and abilities but as labels or diagnostic categories which can be generically pigeon holed! It's time this way of dealing with persons with various handicapping conditions be disposed of and Blatt's (1973) hypothesis considered:

> "Given proper conditions, it can be demonstrated that intelligence is plastic, i.e., intelligence is a function of practice and training. That we have not been able to accomplish such change in people is, I believe, less a defect of this hypothesis than it is of our practice."

It is time that interests and needs of persons with various handicapping conditions be recognized. In general, they have the same interests, needs, and abilities regarding creative art activities as any other group; they need to participate in these activities for pure enjoyment. Studies are needed to determine whether or not changes in behavior really result from participating in creative art activities. When treatment variables cannot be isolated, precautions must be taken not to make unwarranted conclusions. Some studies reported in this section possess one or more of the following design weaknesses: (1) lack of appropriate assessment tools; (2) no control groups; (3) small sample sites; (4) insufficient treatment time; and (5) inappropriate statistical treatment. However, they still provide insights into behaviors that can be changed through use of creative arts activities and suggest guidelines for future research.

Priority Needs

Research and Demonstration

High Level

- Determine effectiveness of various creative arts program aids designed exclusively for use with impaired, disabled and handicapped individuals in improving their functional development in psychomotor, affective, and cognitive domains.

Mid Level

- Pursue activity analysis of creative art activities in terms of their progressions, sequences, values, and uses with individuals having various handicapping conditions.

Personnel Preparation

Mid Level

- Emphasize basic right and need of impaired, disabled, and handicapped individuals to participate in creative arts activities in terms of their interests, abilities and needs.

- End proliferation of program aids which dictate specific program activities; emphasize program aids which provide guidelines, methods, and techniques for providing creative arts activities to persons with various handicapping conditions; emphasize use and adaptation of program aids developed for the general population.

PHYSICAL EDUCATION AND RECREATION FOR INFANTS AND YOUNG CHILDREN WITH HANDICAPPING CONDITIONS

State of the Art

One of the strongest educational trends in recent years has been that of early childhood development. Not only are more and more preschool programs developing in the mid-1970's but current projections indicate an increased emphasis on the early years of children will occur in future educational and training programs. U. S. Department of Commerce Census Bureau projections for the under five population range from 18.8 to 21 million by 1975; 20.5 to 27 million by 1980; 20.8 to 30 million by 1990.[1] As of 1970, more than 17 million Americans were under the age of five; during 1970 4.1 million three to five year olds were enrolled in preprimary educational programs. These children will be enrolled in increasingly larger numbers in the future due to current and anticipated expansion of comprehensive special education and general education legislation to include younger children in education programs offered by public school systems. These programs are developing since personnel from educational, medical, psychological, physiological and other allied professional fields stress that the foundation for a child's subsequent complex behaviors and skill performances occurs before he enters kindergarten.[2] In fact, numerous personnel feel that the most crucial period of growth and development is between infancy and chronological age two.[3] Early childhood education is defined as:

> "a pedagogic specialty dealing with children during their youngest, formative years. The upper age limit is generally recognized to be six years, by which time the child has entered the formal educational structure. Therefore, the thrust of early childhood education takes place in what would normally be considered non-traditional (educational) environments--the home, day care centers, nursery schools. In some of these settings, educational programs designed for pre-school age children have been developed." [1]

A 1973 analysis of status, trends, and issues in early childhood education [1] reported the following concerning markets for and factors concerning this area:

- Youngsters themselves. Instruction is designed to impact rudimentary cognitive skills, such as language, acquisition and basic concepts for working with numbers, or necessary affective skills, such as the ability to work within a group. Materials range from televised instruction of "Sesame Street" or "Mister Roger's Neighborhood" to print and records, as evidenced by non-broadcast materials designed by The Children's Television Workshop.

- Parents of pre-schoolers. Educators have recognized the need to instruct parents in desirability of preparing their children for more meaningful school performances by working with them while still at home to lay the groundwork for cognitive and affective skill acquisition. Strategies include awakening parents to contributions of toys for educational play and providing follow-up for instruction to insure retention. Parental instruction may take place in specially-designed groups, such as offered by the Toy Lending Library, or through home visitation in conjunction with televised instruction, as exemplified by the preschool program of the Appalachian Educational Laboratory.

- Operating staff of early childhood services programs including professional teachers and administrators, paraprofessional aides, and volunteers. The extent of this market is difficult to ascertain; it's potential may be surmised by United States Department of Labor projecttions which anticipated a need for 23,000 child care workers annually during the period of 1972 to 1980.

Three factors are contributing to development of the early childhood education field:

- Increasing attention within educational ranks to theories that education within the first six years is instrumental not only for instilling acceptable socialization patterns, but also for establishing the necessary cognitive base for subsequent school success.

- National interest is given to early years of children primarily due to federal funding which began with Project Head Start, a War on Poverty effort of the mid 1960's. Project Head Start is designed to prevent educational difficulties often exhibited by disadvantaged children by providing them with preschool educational opportunities. Follow Through, sequel program to Project Head Start, was piloted in 1967 to provide comprehensive supplemental help to disadvantaged children in primary grades.

- Increasing numbers of women with young children are working; this creates a need for additional day care programs.

Health, Education and Welfare (HEW) Secretary Caspar W. Weinberger indicated [4] that handicapped preschoolers can look forward to a brighter future as the result of nearly $12 million in early childhood education grants awarded for 156 projects across the nation. Projects compose the First Chance Network and are funded by the U.S. Office of Education (USOE) under the Handicapped Children's Early Childhood Education program which seeks to identify problems, provide programs for handicapped children in their early years, and prevent or reduce some detrimental effects of handicapping conditions. Grants have been awarded for planning, demonstration, and outreach--use of federal funds for supplementary training and assistance in addition to basic services provided by state, local, or private support--projects. In addition, two special related activities receive support: Technical Assistance Development System (TADS) at the University of North Carolina and Mister Rogers' Neighborhood.

Jane DeWeerd, Director of USOE Handicapped Children's Early Childhood Education program, discussing these funded projects said: [5]

> "Of special interest this year, ... is a trend on the part of colleges and universities to expand beyond campus-based programs to community-based operations. At Kent State, for example, project workers are going into state residential facilities for the severely multiply handicapped to work with babies, and the team made an early discovery that at least one of the infants did not require institutional care. .... A grant to the Mister Rogers' Neighborhood television program, now in its third project year, will develop segments encouraging preschoolers to accept handicapped persons' individual differences, ..."

TADS is a support system for preschool projects in the First Chance Network and offers a technical assistance delivery system which has a triple thrust: *program planning and evaluation*, *child and parent programing*, and *communication systems*. According to David Lillie, Project Director,[6] "Technical assistance takes many shapes such as needs assessments, small group workshops, individual consultation, objectives analysis, information processing, project advocacy, and technical reports." TADS publishes *Cycles*, a newsletter, which serves as a vehicle for exchange and dissemination of information for the First Chance Network.

An example of a First Chance Network project is the Teaching Research Infant and Child Center, Oregon State System of Higher Education. The project model includes the following for handicapped children[7]:

- infant program for ages 1-3 in which parents are educated in infant stimulation and training techniques,
- instructional facility for severely impaired children, ages 2-8, who are not considered able to complete integration with normal children,
- day care center program for ages 2-8, including a number of Mexican-American children who desire to retain their own culture and yet wish to achieve sufficient English language skills to succeed in English speaking schools,
- integrated day care center for children ages 3-8,
- parent training program which is conducted in a core Behavioral Clinic and in satellite behavioral clinics established in selected Mental Health Clinics,
- prescriptive program for children whose parents or teachers are having difficulty developing programs for them, and
- teacher training which is conducted for practicing teachers and for college practicum students.

Another component is planned to demonstrate an alternative group home living environment for five formerly institutionalized handicapped children. Each child who is seen in the Behavioral Clinic is assessed in the following areas: self-help skills, motor development (basic motor movement of head holding, turning over, crawling, standing, walking, to more advanced fine motor coordination), and social skills.

The Congressional mandate of October 1972 requiring that at least 10 per cent of Project Head Start's enrollment must be reserved for handicapped children, opened this preschool program to handicapped children. Handicapped children comprised between 4 and 5 percent of the total enrollment in 1972; a nationwide survey in 1973 showed that more than 10 percent of the nearly 400,000 children enrolled were handicapped.[8] However, since many children already enrolled in

Head Start programs were later diagnosed as being handicapped and subsequently included in the tabulations used for satisfying the minimum requirement, an additional 10 percent enrollment of handicapped children probably did not take place. It is for this reason that the minimum requirement will be enforced more strongly in fiscal year 1976 in each state.

The Head Start Information Project (HIP), Council for Exceptional Children (CEC), develops resources and provides training for Head Start personnel working with handicapped children.[9] HIP is funded by a grant from Office of Child Development, HEW, to:

- facilitate efforts of local Head Start centers serving handicapped children through preparation and delivery of information and training projects,
- provide consultative services to Head Start staff regarding services to handicapped children, and
- mobilize existing resources in the handicapped services field aiding Head Start in implementing a comprehensive program for handicapped children.

Some products developed for the CEC Handicapped Children in Head Start Series include:

- Head Start Resource Catalogue of Instructional Materials for use with handicapped children,
- articles in topical areas by early childhood specialists,
- Overview of State Preschool Legislative Provisions,
- National Directory of Resources in the Handicapped Services Field,
- staff training modules, and
- Guide for Homemade Innovative Play Equipment for Activities in Physical Education and Recreation for Impaired, Disabled, and Handicapped Participants.

CEC Information Center computer searches* and other services are also provided.

Another example of related federal funding is the Careers in Integrated Early Childhood Program initiated in 1971 at Northridge Preschool Laboratory, California State University, Northridge, California. The project is partially funded by Social and Rehabilitation Service (SRS), Rehabilitation Services Administration (RSA), HEW to design teacher training programs at the preschool level for careers in nursery schools which integrate children with handicapping conditions.* A questionnaire survey was conducted by project staff to obtain information from 230 state licensed private nursery schools in California concerning staff, tuition, operation, enrollment, willingness to accept referral of children with handicaps and type of handicap accepted.[10]

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*For information, contact Project Director, HIP, Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091.

The great majority of directors returning questionnaire were positive in their attitudes toward integration of handicapped children; however, a small number of school directors incorrectly interpreted licensing requirements as the reason they would not enroll handicapped children. Misinterpretation of the law was brought to the attention of respondents through correspondence from project personnel so that this obstacle would be overcome. Another problem encountered by the project [11] was teacher uncertainty. Molly Gorelick, Project Director, stated,

> They asked "what do I do with the retarded child?" .... My answer was, "what do you do with any child who is new to a class?" .... The teachers were insecure, fearful about their ability to deal with a little child who came to them with a label. .... Thus, before we can succeed in integrating children, we will have to overcome this insecurity and attitude that only specialized experts can work with children with handicaps. .... Those of you who now have children in your classes who are blind, deaf, retarded or with other handicaps have found that these children ride the same tricycles, climb the same jungle gyms, lick their fingers after stirring some delicious mixture, throw sand, hug you or taunt you-in other words they really are children.

IRUC staff reviewed 1974 state reports [12] submitted to the Bureau of Education for the Handicapped (BEH), USOE, to identify projects in physical education, recreation, and related areas for persons with various handicapping conditions. Approximately $1,196,782 in federal and/or state financial support was provided to projects solely for physical education and/or recreation for handicapped participants of all age levels. Some 450 preschool level handicapped children were identified as participants in these programs. No preschool level handicapped children were identified as participants in projects with components in physical education and/or recreation for participants with handicapping conditions ($9,654,759 federal and/or state support provided) or in projects for areas related to physical education and/or recreation for handicapped individuals of all ages ($941,804 federal and/or state support provided). This does not indicate a high priority for preschool level handicapped children in previous federal and/or state funding of such projects. The totals indicated above for overall physical education and recreation for all age levels represent a small percentage and proportion when all available funds ($153,466,720) from these federal and/or state appropriations are considered. Also, an analysis of 50 cities and 50 counties receiving the largest amounts of revenue sharing funds revealed that a little over 1 percent of these funds was going to programs for children of all ages and slightly less than 1 percent to programs for handicapped persons of all ages.

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*Detailed information regarding integrating or mainstreaming trends and approaches for handicapped participants of all ages in physical education and recreation programs is provided in Integrating Persons with Handicapping Conditions Into Regular Physical Education and Recreation Programs (American Alliance for Health, Physical Education, and Recreation, 1201 16th Street, N.W., Washington, D. C., 20036, $2.00).

A review of state of the art papers included in a report[13] prepared for The Interagency Panel on Early Childhood Research and Development revealed the following about or related to physical education and recreation for handicapped preschool level children:

- Studies of learning and cognitive development need to include clarification of components and sequential steps of cognitive development and the precursors of these components and steps.

- Studies of social-emotional development need to include study of the role of play and pleasure in development.

- Research on all children needs to include assessment of the whole child.

- Recommendations for basic research in day care include the study of many variables ..., as well as strategies for conducting research that will provide new information on the "whole child", "the life space of the child" and longitudinal aspects of child development.

This report also analyzed research effort in physical education and recreation for children in FY'73 Revised Plans using FY'72 as a basis for comparison. Research effort was listed as occurring in 1973 but with no change in effort from 1972 in National Institute of Mental Health (NIMH), Material and Child Health Service (MCHS), and U.S. Office of Education (USOE). No research effort was indicated for Office of Child Developed (OCD), National Institute of Child Health and Human Development (NICHD), Social and Rehabilitation Services (SRS), Office of Economic Opportunity (OEO), National Institute of Neurological Diseases and Stroke (NINDS), or Department of Agriculture (USDA) for either year. Effort of National Institute of Education (NIE) was not given, although a footnote was given that "over 75% of the FY'73 plans consist of activities initiated by OE, and reflect the emphases of OE." This report contained another analysis concerning research effort for agencies for FY'74-'78 Forward Planning using FY'73 as basis for comparison revealed the same levels of effort for these agencies. The report did not identify specific projects funded which were concerned with physical education and recreation for handicapped children; however, the little mention of this subject in the total report does not indicate a strong concern for this program approach. Since a total of 990 projects, with a total budget of approximately $148.4 million, were analyzed for the project, it would seem that physical education and recreation programs for preschool handicapped children have not received much emphasis in previous federal support.

Although a review of previous federal and/or state supported projects does not indicate much emphasis in physical education and recreation for handicapped children at the preschool level, this programing approach is greatly needed. It is recognized that the majority of the child's early learning experiences is largely motor or physical in nature.[14,15,16,17,18] Whitehurst[19] felt that movement experiences means many things to young children: life experiences, self-discovery, physical and social environmental discovery, spatial and self-expressive freedom, safety, communication, enjoyment and sensuous pleasure, and acceptance by others. If movement means so much to the developing child, further justification should not be required for its inclusion among major techniques in education. Support for positive contributions of physical activities in total development of handicapped pre-kindergarten age children is given in selected references concerning 1) music therapy for mentally retarded [20] and psychotic children [21], and 2) perceptual motor activities for cerebral palsied [22] and learning disabled-disadvantaged [23] children. In addition, an annual report of the Motor Performance and Play Research Laboratory, Children's Research Center, University of Illinois, stated: [24]

> Since we believe that play and motor behavior are integral to the development of children, the goal of the laboratory is to contribute to a body of knowledge that allows the optimization of play and motor learning environments for children.

During a 1968 perceptual motor symposium [3] Logan Wright, Director, Psychological Services, Children's Memorial Hospital, University of Oklahoma, traced research support concerning effects of sensory stimulation upon growth and development of infants and children. He stated:

> There is both empirical evidence and theoretical support for the idea that sensorimotor stimulation, during the first two years of life, can have a crucial and facilitating effect on all kinds of development. This fact possesses implications for physical educators and other professionals interested in the impact of perceptual-motor experience on development. It suggests the possibility of an involvement if not a focus, on the first two years of life.

Focus upon growth and development in the first two years of life of handicapped children has been increasing during recent years; [25,26,27] however, much more programing needs to be done. Examples of infant stimulation programs in California include:

- Developmental Program for Infants and Children, Recreation Center for the Handicapped, Inc., 207 Skyline Boulevard, San Francisco, California, 94132,

- Atypical Infant Development Program, Department of Health Services, Mental Retardation Division, Kentfield, California, 94904,

- Early Child Development Program, Children's Health Home, 515 E. Poplar Avenue, San Mateo, California 94401, and

- Delayed Development Project, 4131 North Crown, Stockton, California 95207.

Programs at the infant level usually stress planning and programing in cooperation with all related members of the rehabilitation-education team such as physicians; psychologists; social workers; physical, occupational and speech therapists; teachers; public health nurses; and volunteers. Activities usually consist of perceptual stimulation; motor development; activities of daily living; socialization, free play; physical, speech, and occupational therapy; nutrition and feeding techniques and cognitive development. Children usually are visited in the home by staff members who also train parents to work with their own child. Additional information on this subject area is available in Infant Education and Stimulation (Birth to 3 years): A Bibliography which is distributed by the ERIC Clearinghouse on Early Childhood Education. * 28

Large numbers of programs for preschool age children with various handicapping conditions are rapidly increasing due to state legislation and litigation mandating education for all in least restrictive environments and zero-reject principles as they apply to rights of handicapped children to education. 29 Increasingly, state laws mandating education for all children and youth, usually from two to three to 21, regardless of type or severity of handicapping conditions are being enacted. For example, in November 1973, the Regents of the University of the State of New York issued a Position Paper on the Education of Children with Handicapping Conditions which included the following statements regarding preschool level children: 30

> ...need for the screening and identification of children with handicapping conditions beginning at birth by medical agencies so that there can be the earliest possible treatment of these conditions coupled with the development of cumulative health records for each youngster. The Regents has recommended the establishment of programs for handicapped children who can reasonably be expected to benefit from a preschool program. For most handicapped children this pre-school or early intervention would begin at age three.

As stated above, early childhood level programs are increasing rapidly and indications are that this trend will continue; however, there have been counter arguments against such programing. For example, a recent study 31 concerning impact on children enrolled in the California State Preschool Program did not indicate much effectiveness of the program. The California State Department of Education evaluated 35,286 children enrolled at nearly 150 selected elementary schools in disadvantaged areas throughout the state. Results revealed that in no case did the graduates of the Preschool Program score significantly better on tests of performance, motivation, or productivity in kindergarten, first grade, or second grade than the children who had not been enrolled in a Preschool Program. However, since the preschool graduates did not score significantly lower than the comparison group, the researchers felt the program "probably -- but not definitely -- was associated with some improvement in student performance and motivation." Officials from the state Legislative Analyst's office stated that the findings were not considered sufficient to warrant termination of the program "but they may not want to expand it."

An analysis of laws and provisions 32 for physical education in public schools applicable to students with handicapping conditions indicated that physical education

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*ERIC Clearinghouse on Early Childhood Education, University of Illinois, College of Education, 805 W. Pennsylvania Avenue, Urbana, Illinois, 61801, provides selected information and materials concerning child growth and development from birth through primary grades.

is a part of education that has been and should be required for all students. Additional support and evidence of the need for physical education as a part of education that is required for all handicapped children and youth are contained in recommendations of the Congressionally mandated BEH Advisory Committee on Physical Education and Recreation for Handicapped Children:

> The Committee recommends that all programing for the handicapped define educational opportunities to include physical education and recreation experiences and that these experiences not be limited to those avilable within the scope of a formal traditional school program. Within this context we further recommend that: .... Physical Education is an integral part of total school program experiences for all handicapped children.

Because of the early childhood education trend and in recognition of the contributions of movement activities to total growth and development of preschool age children, the American Alliance for Health, Physical Education, and Recreation (AAHPER) formed an early childhood committee within the Elementary Physical Education Commission to gather information and resource materials and to identify related programs and personnel. AAHPER has been involved in conferences and development of materials with related professional organizations such as Association for Childhood Education International (ACEI), Council for Exceptional Children (CEC), American Association for Elementary, Kindergarten, Nursery Education (AAEKNE), and the National Association for the Education of Young Children (NAEYC).* Information and assistance for programing in the regular early childhood education field is available from the AAHPER Consultant for Elementary School Programs. Publications on motor activity and perceptual-motor programs for this age level are also available from AAHPER Publication Sales.[33, 34,35,36] The AAHPER Consultant on Programs for the Handicapped provides related information and services pertinent to preschool level physical education and recreation for handicapped children.

This early childhood level programing also has resulted in recognition that preservice and inservice teacher training programs are greatly needed. A 1972 review of status of preschool motor development programing by Flinchum and Hanson[37] stated that very few professional preparation programs offer any training for work with young children even though projections are that 40 percent of the three to five year olds will be in school by 1975. AAHPER is a member of the Child Development Associate Consortium (CDA) formed by the Office of Child Development (OCD) to provide competent paraprofessional personnel trained to work in programs with preschool children;[38*] this coordinated effort should assist in development of appropriately prepared personnel.

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*Contact the following organizations for information concerning available audiovisual materials, publications, resource assistance, conference reports and information on future related conferences:

AAHPER, 1201 16th Street, N.W., Washington, D. C. 20036.
AAEKNE, 1201 16th Street, N.W., Washington, D. C. 20036.
ACEI, 3615 Wisconsin Avenue, N.W., Washington, D. C. 20016.
CEC, 1920 Association Drive, Reston, Virginia 22091.
NAEYC, 1834 Connecticut Avenue, N.W., Washington, D. C. 20009.

Summary

The above discussions concerning the state of the art in early childhood education for handicapped children as it relates to physical education and recreation programs reveal --

- Increasing numbers of early childhood education programs for both non-handicapped and handicapped children are developing.
- The majority of preschool programs have been increasingly supported by state and/or federal funds.
- Substantial resources are available to personnel involved in comprehensive early childhood education programing.
- Factors such as administrator's attitudes and misinterpretation of laws in addition to teacher uncertainty can affect integration of handicapped children into ongoing preschool programs.
- Analyses of the Bureau of Education for the Handicapped state reports and previous research efforts in this field do not show a high priority given to physical education and recreation programs or research studies for handicapped youngsters even though state-of-the-art summaries give partial support for research needs relative to motor experiences, play activities and total development of the child.
- It is recognized that the majority of the child's early learning experiences is largely motor or physical in nature and play and motor behavior are integral to the total development of the child; especially in the first two years of life.
- Physical education is an integral part of total school program experiences for all handicapped children; related professional organizations are increasingly involved in preschool level physical education programs for non-handicapped and handicapped children.
- Information is available to assist personnel providing preschool physical education/recreation programs for children with handicapping conditions. Some of the topics covered in the literature are: organization and administration, parent involvement, program approaches, activities, methodology, identification of developmental stages and behavioral patterns of infants and children, evaluation, facilities, supplies and equipment. (See Appendix, Program Literature for Physical Education and Recreation for Infants and Young Children with Handicapping Conditions).
- in-service and pre-service teacher training is needed in addition to paraprofessional training in this subject area.

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* OCD, Box 1182, Washington, D. C. 20013.
CDA, 7315 Wisconsin Avenue, Bethesda, Maryland, 20014.

Comment

One of the problems causing an apparent lack of interest in physical education and recreation in early childhood education programs is some lack of understanding and communication between personnel in related disciplines, such as physical education, recreation, early childhood education, occupational therapy, physical therapy, speech therapy and corrective therapy. Educational experiences such as motor development, perceptual motor development, socialization, cognitive development and play activities that have been included in early childhood education programs are components of physical education and recreation programs. Semantic problems resulting from terminology used by educators both at the programing level and in formal reported survey information may cause misleading interpretations about status of programing. Since physical educators and recreation personnel are knowledgeable about early motor development and movement patterns [39,40,41,42,43,44] and play activities[34] in addition to probably relationships between physical activities and social and cognitive development, it is important this area of expertise be provided at the preschool level. Conversely, it is just as important that all other related personnel provide their expertise to physical educators and recreation personnel who are becoming more involved in preschool programs. This interdisciplinary approach is urgently needed at this crucial stage of development of preschool age handicapped infants and children.

PRIORITY NEEDS

Research and Demonstration

High Level

- Conduct a planning conference involving personnel of disciplines/specializations related to early childhood development to discuss programing that should be provided at this age level and to identify existing models involving motor activities, physical education, and recreation that should be validated and/or field tested.

- Evaluate effectiveness of early childhood education programs, in particular those with substantial components of movement/motor/physical activities. Follow-up implications of studies with contradictory results of effects of various early childhood programs and activities such as those conducted in relation to California State Preschool Programs.

- Review results and findings from research studies and projects, empirical evidence, and subjective observations dealing with early childhood programs and activities for non-handicapped children so that appropriate applications can be made with impaired, disabled, and handicapped children.

- Plan and implement both longitudinal and reverse longitudinal studies and projects to determine long range effects and cause and effect relationships of various types of early childhood programs and specific activities upon psychomotor, cognitive, and affective functions.

Personnel Preparation

High Level

- Provide inservice and preservice materials and opportunities that include skills, knowledges, and competencies for programs and activities for children at this age level.

- Disseminate resource information and research results for application by practitioners.

- Emphasize an interdisciplinary approach that overcomes lack of communication and semantic problems existing among personnel in such areas as physical education, recreation, early childhood education, occupational therapy, physical therapy, speech therapy and corrective therapy in addition to parents. Emphasize coordination among existing programs/projects such as Head Start, Follow Through, Technical Assistance Development System, and the Council for Exceptional Children Head Start Information Project.

- Develop and establish programs designed for groups such as parents, volunteers, citizen advocates, foster grandparents, and surrogate parents in theory and techniques of infant stimulation, reflex training, and fundamental motor development.

- Explore efficacy of introducing units dealing with theory and practice of various aspects of early childhood education programs and emphasizing physical/motor aspects of child/infant development as part of secondary school courses in family planning, health education, home economics, and related areas.

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DIAGNOSTIC-PRESCRIPTIVE TEACHING IN PHYSICAL EDUCATION, RECREATION, AND RELATED AREAS FOR INDIVIDUALS WITH VARIOUS HANDICAPPED CONDITIONS

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State of the Art

Introduction

A recent innovation in teacher education is the preparation of diagnostic-prescriptive teachers. Where formerly educational institutions prepared teachers as dispensers of product information--the curriculum truths of the day, today, in a process-oriented approach to teaching, the teacher must demonstrate proficiencies in: the ability to diagnose student needs and strengths after an accumulation of all relevant data; the ability to assess performance formatively, i.e., to note typical and atypical patterns; the ability to analyze the different styles of learning; the ability to prescribe educational experiences on the basis of matching individual needs and learning styles with teaching methods and curriculum; and the ability to evaluate learner progress summatively.

Purposes of the Report

This report is designed to review and analyze diagnostic-prescriptive teaching in physical education, recreation, and related areas for individuals with various handicapping conditions.[1] Its specific objectives are:

1. A description of diagnostic-prescriptive (D-P) teaching
2. A review and critical analysis of related literature with implications for subsequent studies
3. A summary which includes major findings and a needs assessment

The first section of the report defines diagnostic-prescriptive, cites underlying assumptions, and provides examples of D-P models. The second section provides a review of the research related to the teacher and the learner, and presents a critical analysis of the studies reviewed. The final section summarizes the findings with indications of immediate and long range research needs.

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[1] Special thanks are extended to Dr. Lillian White-Stevens and Ronald Lesher of the Office of Program Development, New Jersey State Department of Education for their many suggestions which have been incorporated in the final document.

DIAGNOSTIC-PRESCRIPTIVE TEACHING
DESCRIPTION AND RATIONALE

Definitions

Diagnostic-prescriptive teaching refers to the processes used by the teacher to make intelligent decisions regarding student needs, e.g., testing, assessing, prescribing and evaluating (Report of the Task Force on Early Childhood Education, 1972). Bronder (1973, 1579A) views diagnostic teaching "...as a technique through which the teacher assesses what each student knows in order to find a starting point for further learning." Prouty and McGarry (n.d., p. 52) clearly delineate the functions of the D-P teacher when they state:

> "A diagnostic/prescriptive teacher's skills include the ability to: (a) analyze correctly the behavior of adults and children; (b) utilize successfully informal teaching techniques and materials to diagnose children's needs and capacities; (c) create realistic, well-organized, easily understood educational prescriptions; (d) develop and maintain good rapport with teachers and principals; (e) work cooperatively with a range of other ancillary specialists; (f) engage in difficult and frustrating tasks over a long period of time with minimal external support or reinforcement."

Other definitions from medical practitioners and educators describe D-P teaching somewhat differently, but agree basically with the aforementioned definitions (DeGowin and DeGowin, 1969; Peter, 1963; Wilson, 1974).

Basic Assumptions

There are many assumptions underlying D-P teaching. The primary assumption is that improved pupil performance results from the effective mastery of D-P skills. This, in turn, leads to three subordinate assumptions:

1. A valid and reliable D-P teacher training model, or models exists

2. Teacher trainees can successfully master the D-P strategies required by the model or models

3. Teacher trainees can effectively implement the D-P approach in a school setting

Comprehensive diagnosis necessitates the availability of a variety of formal and informal, valid and reliable testing techniques and materials. To this, must be added the availability of tasks, activities, and materials that can be effectively utilized to meet the diagnosed needs of a handicapped population which manifests a disparate range of motor needs. These two assumptions are basic necessities for sound program implementation.

The two final assumptions deal with teaching-learning styles. It has been stated that effective prescription necessitates the matching of the teaching method with the unique style of the learner (Talmadge and others, 1968; Mosston, 1966). Thus the premise that there exists a hierarchy of teaching methods and pupil learning styles.

D-P Teacher Training Models

The preparation of D-P teachers necessitates the availability of specific teaching-learning guidelines, a prototype, or model. The model should be broad and encompass all the skills, knowledges, and strategies applicable to motor learning which can be economically and effectively implemented by the teacher.

Vodcla (1975) developed a prototype which he has field-tested for three years; the purpose: to train physical educators, special educators, and recreation teachers so that they possess those competencies essential for the initiation of an individualized motor program for all handicapped children. Included in training programs are the following learning experiences, sequentially structured: (a) master teacher-administration of pre-course inventory to trainees;[1] (b) master teacher-presentation of rationale and/or research supportive of the competency to be learned; (c) master teacher-demonstration of the specific competency to be learned; (d) trainee-performance of the specific competency, under the supervision of the master teacher; (e) master teacher-trainee-discussion of the problem(s) encountered and alternate approaches; (f) trainee-teaching the specific competency to a handicapped child in a realistic setting, under the supervision of the master teacher; (g) master teacher-trainee-discussion of the experience, problems encountered, and possible alternate approaches; (h) trainee-reapplication of the competency in a field setting, under the supervision of the master teacher; and (i) master teacher-administration of post-course inventory to teacher trainees.

The prototype also includes provisions for the individualization of instruction in terms of children. Incorporated in related motor skill competency presentations, is a structure whereby the teacher can meet the unique needs of each learner. The acronym T.A.P.E. (test, assess, prescribe, and evaluate) depicts the processes involved in providing an individualized program[2]

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[1] The training program involves the presentation of twenty-five competencies hypothesized to benefit the following handicapping conditions: low motor ability; low physical vitality, mental retardation/learning disabilities; postural abnormalities, nutritional problems; orthopedic problems; and visual/auditory problems.

[2] The acronym "TAPE" was derived from Hayden (1964).

Schwartz and Osteroff (1972, pp. 6-7) provide a competency format for detailing those skills and strategies needed by the special education teacher:

Diagnostic Competencies

1. Identifies/specifies individual pupil entry levels, learner characteristics
2. Matches objectives with learner characteristics
3. Observes and assesses formally/informally (academic/social levels)
4. Identifies academic/social entry levels
5. Prescribes desired learner objectives, preferred learning styles or individualized instructional strategies
6. Administers, scores, and interprets norm-referenced tests
7. Constructs, administers, scores, and interprets criterion-referenced tests
8. Summarizes diagnostic data and identifies entry level and learner characteristics

Prescriptive (Intervention) Competencies

1. Plans, conducts, and documents the individualized instruction required to produce academic and social gains
2. Plans and writes a prescription based upon the diagnostic profile
3. Implements the instructional plan based upon the diagnostic profile
4. Selects the appropriate tasks/activities and available resources, individualized instructional strategy, motivational techniques, learning environment, and progress checks for ongoing and final evaluation
5. Writes prescription containing the items above
6. Conducts the planned instruction by: providing pupil learning materials, strategies, and environment; observing/recording student progress toward objectives; and reinforcing proper responses

7. Documents the produced pupil behaviors

8. Describes the procedure for translating the diagnostic profile of the pupil into an instructional program

Valett (1970) and Fisher (1970) proffer similar clinical models for teaching the handicapped child.

Other documents reviewed submit slight variations for preparing D-P teachers. Bateman (1967) advances a diagnostic-hypothesis test model. Prouty and McGarry (n.d.) stress the importance of cooperative interaction between the D-P teacher and the classroom teacher. Their model also includes the delineation of specific duties. Additional models worthy of review have been developed by the IPI Program (1968, p. 7), under Title VI-B (1973, p. 5) and Farrald and Schamber (1973, pp. 4-5). Farrald and Schamber also provide a comprehensive list of behavioral characteristics manifested by the learning-disabled child, observable behaviors, and recommended teaching strategies (pp. 40-118).

While not directly related to the topic under consideration, Turner's report (1972, pp. 3-6) is included for its relevance to teacher education. He submits six criterion levels which can be used to provide feedback to teacher education programs and stages at which performance-based certification could occur. His criteria could be used by teacher training institutions as guidelines for setting up preservice, graduate, and inservice courses related to diagnostic-prescription teaching. Briefly, his levels include (paraphrased):

Level 1: Long range effects of teacher behavior on changes in pupil achievement and well being (3 years)--a possible basis for teacher certification

Level 2: Short range effects of teacher behavior on changes in pupil performance (1 year)--a possible basis for teacher certification

Level 3: Evaluation of teacher performance in a classroom over a long period of time (6 months to 1 year)--assess teacher achievement of competency

Level 4: Mini-competency training experiences, not necessarily in the classroom but including children (one semester or less)

Level 5: Demonstration of one competency, no children used, simulated experience (mini-course offering)

Level 6: Demonstration of understanding of a behavior, concept or principle, no demonstration of a competency (mini-course offering)

Review of Related Research

A review and critical analysis of the research related to diagnostic-prescriptive teaching in physical education, recreation, and related areas for individuals with various handicapping conditions shall be presented in detail in this section.

Research Review[1]

The initial preliminary review involved the screening of over 200 documents. Thirty studies met the criteria for final review, i.e., they included an educational or training program which was prescribed on the basis of diagnostic baseline information and some form of pre-post test research design. Nine studies addressed to teacher education and 21 studies related to pupil learning were clustered separately for review. Further, sub-grouping within each cluster was based on the experimental design. Those studies that involved a single group pre-post test design or one treatment group plus a pure control group were examined together; the purpose to assess the effectiveness of the D-P teaching process (13 studies). Seventeen studies involving a pre-post test design of two or more groups were clustered to assess the comparative effects of the D-P process.

Teacher Education Effectiveness Studies[2]

Four studies assessing the efficacy of the Project ACTIVE D-P teaching training model were conducted from 1972-74. Vodola (1972), using a competency-based format, trained 50 physical educators, special educators, and recreation teachers in motor activities for the handicapped. The program included: the administration of a pre-course inventory; a forty hour training program related to 25 competencies; and the administration of a post-course inventory at the termination of the program. An analysis of post-course data indicated all 50 subjects had achieved the hypothesized competency levels (20 of 25), thus the researcher concluded that the findings were significant.

The study was somewhat questionable because no control group was used to minimize those variables which might have resulted in the gain scores, e.g., other exposure of the trainees to similar workshops during the 10-week program. Further, the criterion level of 20 competencies is an arbitrary figure that was selected to determine proficiency. It is possible that the criterion level was too low. If that were the case, the findings would not have been significant.

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[1] The writer patterned his research review and critique after the design of Dane Manis (1973). (ERIC No. ED 083 227)

[2] Some studies were designed as effectiveness and comparative studies, thus there is some overlapping. In addition, some studies included more than one sub-population in the target population.

During 1973, the Project ACTIVE D-P teacher training program was replicated at three sites in the state of New Jersey[1,2] (Vodola, 1974). The studies were designed in accordance with the training program conducted in 1973 except that involvement was expanded to include classroom teachers, undergraduate students, and paraprofessionals. Analysis of the criterion-referenced data for each separate site and for the total population (n=80) revealed that all participants achieved a minimum of 20 of 25 competencies, with an average mean competency score of 23+. As a result of the studies, it was concluded the training model was an effective method of providing graduate/undergraduate students in physical education, special education and recreation with those minimal competencies necessary to implement an individualized Developmental and Adapted Physical Education Program.

The three studies are still suspect because the design was identical to the training program conducted during 1973. However, the performance levels attained by the participants indicated the training model is worthy of further investigation, based on appropriate design.

Roy Lipoti and Thomas Downes (Vodola, 1975) conducted the Project ACTIVE training program at the New Lisbon State School in New Jersey. The program was similar in format to all previous studies except that a control group was added. Thus, pre-course and post-course inventories were administered to an experimental group (competency training) and a control group (no training). The study participants were matched on the basis of educational level and certification (n=12). The results were anlayzed via a non-parametric technique, the Wilcoxon Matched Pairs Signed-Rank Test, and revealed significance (.05 level) in favor of the experimental group.

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[1] Roy Lipoti and Judy Minnitti conducted a workshop at the New Lisbon State School; Thomas Cicalese and Robert Fraser replicated the workshop at Morris Hills High School; and F. June Graf and Michele Bjelis conducted a similar program at Kean College of New Jersey.

[2] As a result of a formative evaluation of the 1973 program, the following adjustments were made: reduction of teacher trainees from 50 to 25; utilization of two teacher trainers for each program; revised teacher training competencies based on an item analysis; and modification of the teacher training manual.

The Lipoti-Downes study included a control group which strengthened the internal validity of the design (i.e., counteracted the effects of history, maturation, and testing) and does support the hypothesis that the training model is an effective method of providing individualized physical education competencies for those subjects involved. However, due to the limited number of subjects (n=12) and the limited design which did not control for initial variance, it is recommended the study be replicated using a larger population with a design that adjusts for disparities in pretest scores, e.g., the use of analysis of covariance.

Arnold (1973) conducted a study to design and evaluate an individualized inservice program for elementary teachers. Thirteen teachers took part in the program which included the development of individualized contracts for inservice work. The contracts were established in the areas of mathematics and language arts and were specified in behavioral terms. Evaluation was also based on mastery of the goals. Five teacher behaviors, based on the individualized model, were also evaluated. Data for analysis were collected from interviews with teachers, administrators, analysis of individual contracts, a teacher questionnaire, and the administration of a semantic differential and attitude survey instruments. Arnold concluded that all five objectives of the individualized inservice program were achieved.

No information was provided regarding the validity and reliability of the data gathering instruments. The lack of a control group jeopardized the internal validity of the study because of the contaminating effects of the intervening variables mentioned previously.

Sigmund (1973) conducted a six-week program to design and demonstrate a model for diagnostic team teaching. This involved skills for planning, assessing, and correcting instructional activities. Following competency attainment, the student teachers (assisted by the college teachers, an education student, and a college supervisor) studied two intact groups of mathematics classes at the junior and senior high school levels. Program effectiveness was determined by the administration of pre-and posttests to the diagnostic and non-diagnostic classes, checklists, tape recordings, attitude surveys of student teachers in the experimental groups; and a journal kept by other members of the team. The researcher stated:

> The data implied that teaching based on diagnosed needs of individual students tends to be more effective than teaching based upon traditional, teacher-centered methods of instruction. ...Students were equally successful in terms of achievement. However, students in diagnostic teaching classes used higher levels of competency behavior. ...This study indicates two teaching teams, after a period of training and practice can: design and implement an

effective individualized-diagnostic teaching program; achieve the competencies required to individualize instruction by diagnostic teaching; and function as an effective team that focuses on diagnostic teaching. (4717A)

The complete study was not available for review, thus negating assessment of statistical techniques applied and method of control. The researcher's implication that diagnostic teaching tends to be more effective than teacher-centered methods is tenuous since achievement gain scores for the experimental and control groups were comparable. However, the study has merit because of its attempt to validate the diagnostic teaching model by assessing changes in pupil behavior.

Perlburg, et.al. (1973) conducted a similar model-effectiveness study using microteaching techniques. An analysis of the pre-posttest data substantiated his hypothesis that the training program is equally effective for student teachers and experienced teachers.

Implications Derived from the Model-Effectiveness Studies

The studies involving the use of control groups (Vodola, 1975 and Sigmund, 1973) revealed the D-P approach to be an effective method of providing teachers with those strategies necessary to implement an individualized program. Although four Project ACTIVE studies (Vodola, 1972, 1973) and the Arnold (1973) and Perlburg (1973) studies did not control the intervening variables, they lend credence to D-P model approach to training teachers because of the gain scores evidenced as a result of the respective training programs. (The Project ACTIVE studies have particular import for the current "mainstreaming" concept because the model has been proven effective for training classroom teachers and paraprofessionals.)

Comparative Studies/Implications

The Sigmund experiment, mentioned previously, was the only teacher training study to compare the D-P method with another method of teacher training (traditional). The results were inconclusive since the behavior changes manifested by the children in the experimental and control groups were equally positive.

This study and the eight other model-effectiveness studies lead to the conclusion that teachers can be effectively trained in the D-P strategies necessary for individualizing instruction. However, the review did not justify the premise that the D-P model was superior to other teaching strategies presently in use. One of the problems encountered was that the studies provided few, if any, consistencies in the design of the D-P models, instruments used to gather data, time allotments for the training programs, and in the application of other independent variables.

A programmatic approach to diagnostic-prescriptive teaching, i.e., a concerted research effort, is needed to resolve the problem.[1] Suggested steps would include: the identification of promising models; a series of studies to determine the effectiveness of the promising models (in simulated and field settings); and longitudinal studies to assess the effects of those models deemed to be effective on pupil performance. The paradigm for such an effort would reflect:

Identification of Model(s)	Impact of Model(s) on Teacher Behavior	Impact of Model(s) on Pupil Behavior

Pupil Education Effectiveness Studies

The efficacy of D-P teaching models on pupil performance was appraised in six studies. An ESEA, Title III Project, 1232 (1972) investigated the effects of the instructional program on EMR and EH children in a regular classroom setting. Fisher (1970) conducted intensive clinical studies of cognitive/affective processes and teacher practices that had substantial bearing on low academic performances and competency levels of E,R children. Working with the profoundly retarded, non-ambulatory, Muccilo (1974) identified their initial performance levels and prescribed individualized perceptual-motor tasks for an 8-week period. Orr (1974) conducted a study to determine the effects of a diagnostic-prescriptive reading program on pupil attitudes toward reading and school. The Office of Research, Pittsburgh Public Schools (1968) conducted a study to evaluate the impact of a remedial physical education program on boys with a low level of physical fitness. Riegel and Taylor (1973) endeavored to remediate specific academic deficiencies in reading and mathematics skills.

All the studies used some form of single group pre-posttest design, thus there were no true control groups. Five of the six studies indicated positive pupil gains; only one study (Orr, 1974) described pupil gains in terms of a significance level. The Pittsburgh study was hampered by minimal teacher training, staff turnover, limited student participation time, and questionable assessment instruments. It was concluded that there was no difference in improvement of students having 1, 2, or 5 periods of physical education per week.

Implications Derived from the Pupil Education Effectiveness Studies

No definitive conclusions can be drawn from reviewing the effectiveness studies. Five of the six studies used the single-group quasi-experimental design, thus negating the possibility of accurately assessing the gain scores which might be attributed to D-P teaching. In the study conducted by Orr (1974), he concluded that the D-P reading program was successful in increasing the reading ability of the students involved.

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[1] "The experienced research worker who conducts a series of related studies, based on a common theory and designed to extend knowledge in a common field is said to be conducting a programmatic type of research." (Travers, 1967, 17)

It is recommended that the studies mentioned be replicated because in each case pupil behavior was affected positively. However, the single-group pre-posttest design should be replaced with an experimental-control group design so that the internal validity of each study can be maintained.

Pupil Education Comparative Studies

Six studies compared the effects of individualized physical education on the motor, physical fitness, intellectual, social, and emotional factors related to the development of mentally retarded, learning disabled and normal students (Rarick & Broadhead, 1968; Vodola, 1969; Vodola, West & Widmann, 1973; Pagano & Vodola, 1974; Cheney & Vodola, 1974; and Martz & Vodola, 1974). The independent variables manipulated included: variations in grouping (i.e., individuals, partners, small groups, and regular class size); time prescription modifications based on strengths and weaknesses; and other variations of D-P teaching. The findings revealed significant positive changes in pupil behavior on the following criterion variables: motor performance--4 of 5; physical fitness--1 of 2; social development--0 of 3; intellectual development--1 of 2; and emotional development--1 of 1.

Seven of the ten studies in special and general education contrasted D-P teaching with the traditional method (Alder, 1974; Romanko, 1974; Hodges, 1971; Hayes & Dembo, 1970; Bloom, 1968; Robinson, 1973; and Dunlop, 1972). Weikart (1970) investigated the effects of three curriculum models on mentally retarded subjects and Barnes (1973) and Spencer (1974) studied the relative effects of D-P teaching variations on pupil performance.

Generally, the design quality of all 18 comparative studies was very satisfactory. (The Rarick & Broadhead structure included an additional group to correct for the Hawthorne Effect, i.e., gain scores attributable to the novelty of the experiment.) Only three reports did not reflect, or did not conduct, intergroup comparisons statistically. The special/general education studies reflected a definite superiority of D-P teaching over non-prescriptive teaching based on the cognitive, intellectual, and IQ gain scores reflected by the experimental subjects (8 of the 10 studies). The Robinson study (one of the two studies in which significance was not attained) hypothesized that mildly handicapped children who were "mainstreamed" could be educated as effectively as students w[illegible] were given assistance in a resource room.

Implications Derived from Pupil Comparative Studies

The comparison of D-P teaching to other teaching/learning strategies leads to the conclusions:

1. The prescription of an individualized program on the basis of all relevant information, formal and informal testing, and formative evaluation provides a viable means of improving the motor cognitive, intellectual, and IQ performance of the handicapped, disadvantaged, and normal students. Implication: Teachers should carefully plan each child's program according to his or her strengths and weaknesses.

2. D-P teaching has either no effect or a negative effect on the child's self-concept (Rarick & Broadhead, 1968; Vodola, 1969; and Vodola, West & Widmann, 1973). Implication: D-P teaching variations tend to minimize social interaction and to prescribe task/activities on the basis of deficits. It is recommended that subsequent D-P programs be structured to include: prescriptions that focus on strengths as well as needs; greater interaction between teacher-student and student-student; and freedom for students to select learning experiences of their own volition.

3. Teaching and curriculum strategies are the ingredients essential to a successful D-P program (Weikart et.al., 1970 and Hodges et.al., 1971). Implications: It is not "what" you teach, but rather "how" you teach. Packaged materials have little value in an individualized program.

4. The greater the structure of the instructional program and the learning environment, the more significant the learning (Barnes, 1973). Implication: Pre-plan each child's entire program in accordance with his or her unique needs.

5. Teachers who receive diagnostic information will effect greater pupil behavior changes than teachers not provided diagnostic information (Spencer, 1974). Implication: Before implementing the D-P program, teachers should interact with, and review all information provided by, the special services team.

Summary: Findings and Needs Assessment

Up to this point, the status report has provided information, research findings, critical analysis, and implications of diagnostic-prescriptive teaching for physical education, recreation and all related areas. This section is directed specifically to D-P findings and a needs assessment as they relate to the preparation of physical education and recreation teachers and to appropriate research.

Findings

There is evidence to substantiate the following assumptions:

1. Promising D-P teacher training models exist.
2. Teacher trainees can successfully master the D-P strategies required by the models.
3. Improved pupil performance results from effective mastery of D-P teaching strategies.

However, as mentioned previously, there is a need for programmatic research. The procedures involved would be: identify those processes necessary for diagnosis and prescription; formulate a model or models; ascertain the effectiveness of the model(s); determine the comparative effects of the model(s); and finally, but most important, conduct studies to determine the effects of the prototype(s) on pupil behavior changes -- for only then, can we indicate the validity of the prototype.[1]

Needs Assessment[2]

Teacher education. The initiation of a physical education or recreation program based on D-P teaching necessitates the teacher be prepared in skills, strategies, knowledges, and attitudes designed to meet the unique needs of the learner, Based on that premise, the following suggestions are recommended for consideration by teacher education institutions for preservice, inservice, or graduate offerings:

1. Restructuring adapted physical education/recreation offerings, with a focus on the child as the center of the learning process rather than on the content-oriented approach (games and activities).

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[1] Alkin and Klein (1972) provide an explanation of how regression analysis can be used to relate teacher performance to pupil outcomes.

[2] The numerical classification does not reflect a priority relationship.

2. D-P teacher training that involves identification of general deficiencies, review of the developmental sequence of learning related to the general deficiency, identification of the child's specific deficiency(ies), and the planning of appropriate motor and perceptual-motor experiences.
3. The development of observational processes, e.g., the ability to critically analyze -- the key to sound diagnosis.
4. Curriculum and activity analysis -- utilizing content as a means to an end.
5. Identification, description, and understanding of the motor patterns of children evidencing the spectrum of handicapping conditions.
6. The hierarchy of learner skills required to ameliorate or remediate the handicapping conditions.
7. Knowledge of, and ability to, interpret clinical instruments.
8. Instructional techniques for dealing with behavioral disturbances exhibited by the handicapped.
9. Training in formative evaluation (to determine adequacy of the program) and summative evaluation (measure progress over the treatment period).
10. Supplies and equipment appropriate for use with different disabilities.
11. Utilization of competency-based instruction as an alternative to teacher training.
12. Development/administration of formal and informal testing techniques (e.g., criterion-referenced norms and assessment procedures).
13. Knowledge of/involvement with special services.
14. Styles of teaching necessary for establishing programs commensurate with the various learning styles of the handicapped population.
15. Identification/application of those positive teacher behavior skills needed to personalize instruction (e.g., establish teacher-pupil rapport).
16. Research training for teachers of the handicapped.

Research

There has been a general lack of research conducted by physical educators and recreational personnel and virtually no research related to diagnostic-prescriptive teaching/learning. Submitted for consideration are the following potential research studies:

1. Identify/validate D-P model(s).
2. Compare the relative effects of different D-P models with other teaching methods.
3. Vary the D-P process to include learner choice and assess effects on different handicapping populations.
4. Assess the relative effects of D-P teaching and D-P teaching-personalized instruction.
5. Identify and explore ways in which varying parameters of teaching behavior and attitudes bear on the motor learning processes of children.
6. Assess the effects of varying teaching strategies, program organization, and learning styles on pupil performance.
7. Investigate/assess styles of teaching, styles of learning, and the results of varied interaction.
8. Conduct studies that assess the effects of matching student characteristics and learning styles with alternative instructional strategies.
9. Identify specific skills, knowledges, and attitudes needed by the handicapped population.
10. Develop motor instruments (observational and objective) to assess specific motor functions.
11. Develop specific materials/equipment that are appropriate to the characteristics of the various handicapping conditions.
12. Identify the motor characteristics of the handicapped, observable behaviors, and appropriate teaching strategies.
13. Develop reliable/valid criterion-referenced objectives that can be used in formative evaluation.
14. Conduct D-P studies at the secondary and college levels.

Summary

Despite the increased attention devoted to the need for physical activity programs for the handicapped, the physical education and recreation professions have exhibited minimal leadership in this direction. Very few studies have explored diagnostic-prescriptive or other teaching strategies which are designed to meet the varied needs of the handicapped population. Cruickshank, et.al. (1961) indicated the critical need for the utilization of D-P teaching when they stated:

> The essential conclusion revealed from this series of research projects is that while generalizations can be made about the psychological characteristics of children with central nervous system disorders, significant variability obtains within any particular group of such children. It has been stated, and it is essentially true, that this group of children represents the epitome of individual differences. ...The need for individual diagnosis is immediately apparent whenever educational placement or planning for a given child is seriously considered. (p. 3)

Although this passage was written fourteen years ago (and was directed to the brain-injured), the passage of time has created an even greater awareness of the need for devising and implementing individualized physical activity programs for all children. The revising of our teacher education programs (including an increased concentration of courses at the undergraduate and graduate levels) and research related to D-P and other teaching/learning strategies will be steps in the right direction. The challenge is ours--we must not fail those unfortunate children who have been committed to our charge.

Priority Needs

Research and Demonstration

High Level

- Identify and validate diagnostic-prescriptive models.
- Vary diagnostic-prescriptive process to include learner choice and assess effects on individuals with different handicapping conditions.
- Conduct studies to assess effects of matching student characteristics and learning styles with alternative instructional strategies.
- Develop observational and objective motor instruments to assess specific motor functions.
- Investigate and assess styles of teaching, styles of learning, and results of interaction between teaching and learning styles.

Mid Level

- Assess effects of various teaching strategies, program organization, and learning styles on pupil performance.
- Develop reliable and valid criterion-referenced objectives that can be used in formative evaluation.

Low Level

- Assess relative effects of diagnostic-prescriptive teaching and diagnostic-prescriptive teaching-personalized instruction.
- Identify motor characteristics of impaired, disabled, and handicapped persons, observable behaviors, and appropriate teaching strategies.
- Conduct diagnostic-prescriptive studies at secondary school and college levels.
- Identify specific motor, physical, and recreational skills, knowledges, and attitudes needed by and appropriate for various special populations.
- Identify and explore ways in which different teaching behaviors and attitudes bear on motor learning processes.

Personnel Preparation

High Level

- Restructure adapted physical education/recreation offerings so as to focus on the child as the center of the learning process rather than on the content oriented approaches emphasizing games and activities.
- Provide diagnostic-prescriptive training that includes: (1) identifying general deficiencies; (2) reviewing developmental sequences of learning related to these general deficiencies; (3) identifying a child's specific deficiencies; and, (4) planning appropriate motor and perceptual-motor experiences.
- Develop observational processes--i.e., ability to analyze critically as part of the diagnostic process.
- Emphasize competency-based instruction.
- Utilize formal and informal testing techniques--i.e., criterion-referenced norms and assessment procedures.
- Employ styles of teaching necessary for establishing programs commensurate with various learning styles of impaired, disabled, and handicapped individuals.
- Emphasize curriculum and activity analysis so that content becomes a means to an end.
- Identify, describe, and understand motor patterns of children with various handicapping conditions.
- Identify the hierarchy of learner skills required to ameliorate or remediate specific handicapping conditions.
- Develop knowledge of, and ability to, interpret various clinical instruments.
- Employ instructional techniques to deal with behavioral disturbances exhibited by impaired, disabled, and handicapped persons.
- Provide training in formative evaluation to determine adequacy of programs and summative evaluation to measure progress over treatment periods.
- Provide knowledge of and involvement with special service personnel, programs, and activities.
- Provide research skills in teacher training programs.

Media Services

Mid Level

- Develop specific materials, equipment, and devices that are appropriate to characteristics of persons with various handicapping conditions.

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AN ANALYSIS OF THE STATUS OF RESEARCH ON PLAY APPARATUS FOR HANDICAPPED CHILDREN

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State of the Art

The play of children is universally characterized by spontaneity, freedom, creativity, discovery, and joyfulness. It can be observed that young children do not wait for a specified time to play, but rather seem to initiate at every opportunity voluntary play activities as an important part of experiencing and discovering life. The play and developmental experiences of children form a continual and integral process and become a desired and important research activity through which self is explored in relationship to the world.

Play and work are not necessarily opposite terms except perhaps in the way in which each is measured or is experienced by the performer. Work can be measurably quantified in regard to an amount of effort or power; whereas play can be measured on a value scale relative to the degree to which it is desirable, pleasurable, and rewarding. Thus, work which meets the above definition of quantified effort could also be play to the individual experiencing it. Unfortunately, because play does not result in a product which can be classified, measured, or sold, it is looked upon as an outlet for the "surplus energy of children." Many adults, therefore, view play as being frivolous and unimportant. At best, it is viewed by many adults as a means of killing time until such time as the child can get to the important tasks of work and/or learning.

Piaget (16) has suggested that much of what we call play is really the active process of the development of intelligence of children. He divides play and games into functional play, symbolic play, and games with rules. He suggests that functional play involves the sensory motor explorations of very young children; whereas symbolic play occurs when representative symbols are substituted for a real object. He observes that games which include rules occur when children are able to verbalize, relate to others, and follow rules. Through the serious business of play, children experientially learn what no one else can teach them. Young children do not differentiate between play and learning, but rather view both as a continuous, integrated and pleasurable process.

Children, through play experiences, are not only mastering their neuro-muscular interaction with the physical world, but are also learning to live in our symbolic culture. In real and imaginative play, the child is able to create a secure and manageable microcosm of the complex adult world. In this he is able to manipulate a variety of materials, objects, and symbols in discovering their relationships to each other and to society.

Research points to play as an effective and positive medium for the physical, mental, and social development of children. Those children who are classified by our society as being handicapped can also develop through the medium of play. However, due to their special developmental needs it would seem most desirable to provide opportunities for an abundance of play experiences in a physically safe and psychologically secure environment. Since these children with special needs basically follow the same patterns of development as all other children it is important that the quantity and quality of play experiences necessary for optimum development be made accessible to them.

An examination of the descriptive research concerned with the utilization of play apparatus by all children, including those considered to be handicapped, indicates vast areas yet to be explored.

The relatively small number of studies conducted in this area to date reflects perhaps both the small importance society has assigned to play for young children, the low priority educators have given it, and the difficulty of structuring a research study so that it does not violate the spontaneity of play.

The play apparatus found on most playgrounds in the United States traditionally includes swings, slides, teeter-totters, merry-go-rounds, and jungle gyms. Mahajan (15), of the Consumer Product Safety Division of the National Bureau of Standards, indicates that more than 800,000 emergency-treated injuries, involving playground equipment, occur each year. Approximately 57 percent of these injuries result from the attempted use of home playground equipment, whereas the remaining 43 percent occur on school and community playgrounds. One half of the total number of playground accidents reported were attributed to inappropriate use of playground equipment by the children. No information is provided concerning possible injuries sustained by handicapped children in attempting to play on playground apparatus. As a result of the above statistics, a study was undertaken by the National Bureau of Standards in an attempt to establish safety standards for home playground equipment. The results of the study pointed out that it is presently difficult to establish safety standards for home playground equipment due to the limited information available. However, it was concluded that interim standards for structural durability, safety design, and a program of playground consumer education are needed to reduce the number of accidents.

While interim standards are important, the single usage design of traditional equipment may have an even more important, although indirect, effect on the number of accidents experienced by children who attempt to move creatively on play apparatus. When traditional play equipment is analyzed regarding its utilization by children, we find many hazardous situations. For example, teeter-totters and swings allow for safe movement only in a vertical and/or horizontal plane. When children move on either of these apparatus in a way different from the singular use intended by the designer, their safety is in jeopardy. Since both pieces of apparatus accommodate a relatively small number of children, those children waiting their turn many times become those injured by a moving teeter-totter or a flying swing. In addition, if a child slips while balancing on the cross beam of a teeter-totter or is hit by one of its moving boards, the severity of the injury sustained is magnified by the structural design of the equipment. The traditional slide is perhaps a more explicit example of the inadequacy of current playground design. The steps leading up to a ten-foot high slide allow very young children to climb to the top, but the small platform at the top and narrow slide also provide for an easy, but dangerous, fall.

Also inherent in the design of traditional playground equipment are the potential negative psychological effects on children relative to the development of spontaneity, creativity, and discovery on play equipment which severely limit the number of ways in which a child can safely respond. While no formal studies have been reported concerned with answering the questions of the effects of this one-dimensional design on the physical safety and psychological development of children, a few studies have looked at the degree of utilization of traditional playgrounds by children.

Dee and Liebman (5) report the average attendance per day, exclusive of evenings and nights, on selected playgrounds of the City of Baltimore was twenty persons per day. They also reported a negative relationship between attendance and the presence of swings and slides on the playground. Wade (20) further reports that the average amount of time spent per day by children on a single daily visit to traditional playgrounds in the City of Philadelphia was fifteen minutes. The apparatus on these playgrounds which consisted of swings, slides, see-saws, and merry-go-rounds were idle at least 88 percent of the time during hours in which they could have been in peak use.

Based on the observation of this author of traditional playgrounds, over a period of time, unfortunately the above studies seem to be representative of conditions as they currently exist. There is little indication that traditional playground apparatus can offer the variety of movement experiences necessary to sustain the interest of non-handicapped children on a continuing basis, much less meet the special needs of handicapped children.

Indeed, it is questionable whether any playground apparatus will sustain the interest of children for prolonged periods of time unless it provides for an infinite variety of movements or is capable of being manipulated by the child.

One such approach which meets the latter criteria is the Adventure Playground Concept which originated in Denmark over 35 years ago. In the Adventure Playground, an outdoor setting is provided in which children are allowed and encouraged under the supervision of an adult play leader to build their own playground. Tools and scrap materials are provided and imaginative play apparatus is planned and constructed by the children. The apparatus, many times, allows for the performance of swinging, sliding, balancing, and jumping-type activities by the children. After utilizing the structures for play, the children modify or completely reconstruct the play environment to accommodate their new interests. Thus, an ever-changing play area is periodically created by and for the children who utilize it. Not only have Adventure Playgrounds been built in England and other European countries, as well as the United States, by non-handicapped children, but Hurtwood (13) reports an Adventure Playground which was opened in February, 1970, has successfully served an average of 500 physically, mentally, and emotionally handicapped children per week.

Currently, there are seven million school-aged children in the United States who are described as being either physically, intellectually or emotionally handicapped. While one might agree that these children could be absorbed into presently existing school facilities with minor modifications, the traditional playground equipment in these schools would require major redesigning. Perhaps, because it is so readily observable, the degree of utilization of playgrounds by handicapped children has not been systematically documented. The physically handicapped child is many times excluded due to obstructions leading to or barriers inherent in the design of playground equipment. The special needs of visually handicapped children have not been considered in the design of most playground equipment. Additionally, designers have not provided for the multiple needs of multiple-handicapped children. Children who are mentally retarded, learning disabled, emotionally disturbed, or auditorially handicapped perhaps are less penalized in their use of playground equipment. However, this is small consolation when one considers the meager use of playground equipment by all children non-handicapped and handicapped alike which was documented earlier.

If we conclude that existing playground equipment should be improved or redesigned, the next concern becomes one of identifying what is known about the interaction of children in play with regard to the color, size, texture, shape, and position of play apparatus. While the research directly related to this question is not extensive, the following studies form a basis for further needed research.

Studies of abstract color preferences of children by Burnham, Hanes, and Bartleson (3) indicate that 4 and 5-year-old children are in the process of changing their preferences from warm colors, such as red and purple, to cool colors, such as green and blue. The study raised the question as to whether abstract color preferences are predictive of the effects of color on the play behavior of pre-school children was not clear. However, another study by Witt and Gramza (23) recorded the behavior of 4 to 5-

year-old children while playing with red, blue, green, and gray colored blocks which were presented in varied spatial arrays. There were no significant preferences by the children for any one of the four colors presented nor was there any preference difference between sexes. The study suggested that abstract color preferences may not be a reliable predictor of the selection of colored play objects. Children further clearly selected piles of blocks at either end of a semicircular arrangement despite rotating the groups of colors. Thus, position of the play object was more important than the color in their selection by the children. In another study by Gramza, Witt, Linford, and Jeanrenaud (10), mongoloid children displayed no significant preference for either color or position in the utilization of blocks.

Surprisingly few investigative studies of the importance of the amount or position of larger play equipment related to its usage by children in a play situation have been reported.

Wade (21) reported no significant difference in the activity level of children in a heavily-equipped playroom and a sparsely equipped one.

Witt and Gramza (22) concluded that the play trestle which occupied the center position in a playroom received the most use by children and that a large trestle was more appealing than a smaller trestle when placed in the center position.

Scholtz (19) found that the amount of play of 4 to 5-year-old boys and girls was increased in relationship to the novelty and complexity of the play setting. Thus, children tended to play less and to play away from apparatus of less complexity.

In addition to basic laboratory research, several recent field-action research and/or demonstration projects were identified. In 1972, the development of a therapeutic playground for preschool handicapped children was reported by Gordon (9). The Jessie Stanton Developmental Playground, located at the Institute of Rehabilitation Medicine of New York University Medical Center, was funded by the U. S. Office of Education and designed by architect, Richard Dattner to meet the physical developmental needs of preschool children with orthopedic or neuromuscular handicaps. The four major areas of the playground include a bridged treehouse, foam and sand pits, sand and water tables, and a grassed hill. The playground can be used by children who can walk and by those functioning in wheelchairs. As indicated by the enthusiastic response of the children, the play area can be termed a success. However, no formal study of the children's play or the contribution of the experience to the development of the children has been reported.

The Magruder Environmental Therapy Complex of the Forrest Park School of Orlando, Florida, designed by Dr. Leland Shaw, of the Department of Architecture of the University of Florida, is an adaptive playground for physically disabled children with perceptual deficits. The outdoor play center, which was constructed in 1968, includes balance beams, free standing walls, foam pit, slides, overhead pull-up, and ramps of various pitches has been termed successful since its inception by the Complex Director, Mr. James Beech. Unfortunately, no controlled research has been conducted regarding the effectiveness of the play experiences of the children in the complex.

Dr. Leland Shaw[1] is currently involved in a three-year research project funded by the National Institute of Health in which he has designed and constructed a prototype model playground for preschool handicapped children. He has constructed with wood a series of triangular-shaped modules which have surfaces of various colors and texture. The circular arrangement of the interconnected modules allows children to select a variety of movements such as crawling, climbing, sliding, jumping or rolling in moving safely over and through the play apparatus. The economical cost of materials and construction of the Shaw design, its durability and popularity with the children during the first year of the study alone, make this a very exciting project. The, yet to be completed, experiential research phase of the study is concerned with the effect of the playground on the perceptual-motor development, the ability of children to relate to their environment, and social development of mentally and emotionally handicapped and non-handicapped preschool children.

The present author is currently engaged in a research and demonstration project funded by the Bureau of Education for the Handicapped of the U.S. Office of Education, which involves the design, construction, and evaluation of three play-learning centers for handicapped children. Each play-learning center was designed to meet the special needs of the population of children who would use it. In addition, cost and durability of materials and ease of construction were applied to each of the play center designs prior to their final selection. The construction, which was done by the research team, resulted in three separate play centers. One center is a multi-level, carpet-covered, interconnected table-type design for preschool mentally retarded children at the United Methodist Preschool Center in Tampa, Florida. A second design was completed at the United Cerebral Palsy Center of Tampa, which incorporates carpet-covered, gently-sloped, hand-rail-assisted ramps, sliding surfaces, a fiberglass-tube slide, a stairway, large soft foam mats, and an elevated partially enclosed activity area. A third design, which involves a treehouse-type concept, was planned and is currently being constructed by the research team with a group of pre-adolescent, emotionally disturbed boys at the Residential Treatment Center of Tampa. The initial response of the children to each of the three play-learning centers has been excellent. Additionally, weekly videotaped recordings of the play of the children, over a fifteen-week period have been made and are being analyzed. Further planned research in this project includes an investigation of the effect of the play-learning center experience on body image, self-concept, motor performance, and symbolic concept learning.

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[1] This description is based on three visits to the University of Florida Project and personal communication with Leland Shaw.

Needed Descriptive Research

Based on the preceding review of research studies and demonstration projects, it is recommended that the following questions need to be answered by systematic research:

1. To what extent is current traditional equipment on school and community playgrounds being utilized by children? Is there any relationship between the type and severity of the handicapping condition and the use of the equipment? Are the developmental needs of handicapped children being met by traditional playground equipment?

2. How can existing playground apparatus be modified for accessibility and safe use by handicapped children?

3. What are the abstract preferences of children in regard to color, texture, size, and shape? Do their selections differ when color, texture, size, and shape are incorporated in the design and construction of play apparatus? Do either of the above preferences differ between handicapped and non-handicapped children?

4. How does the size, shape, and positioning of play apparatus affect the patterns of movement of children?

5. Is there a difference between the response of handicapped and non-handicapped children to play equipment specially designed to stimulate development? Do children of different ages respond to the equipment the same way over an extended period of time?

6. Would the experiences of handicapped and non-handicapped children in using the same developmental playground produce a modeling effect with regard to motor performance and social interaction?

7. How can members of the community and/or parents effectively be involved in the planning, construction, and supervision of developmental playgrounds? To what extent will community involvement or special design considerations reduce vandalism to unprotected playgrounds?

The ultimate concern about the play value of any playground is the extent to which it makes a positive contribution to the development of its participants. While one can argue that the observable movement, pleasure, and enjoyment of children on playgrounds are sufficient benefits, from an educational point of view, a significant increase in positive development and learning is also expected. While numerous experimental studies have been concerned with the development of preschool children as a result of play-learning experiences, there have been very few studies examining the change in children as a result of playing on playground equipment. The following review is intended to formulate a substantive basis for both the importance and need for further research in this area.

The position supporting the planned play-learning environment should not discount the child's spontaneous inclination toward play, but rather should facilitate the investigative, manipulative, and repetitive play behavior of the child. Hunt (11) recommends governing the encounters young children have with their environments by matching the encounter to the developing ability of each child. This would indicate that a developmental playground must be designed so as to provide for a variety of alternative movement responses along the developmental continuum by the children who will use it. Erikson (7) states that the playing child advances forward to stages of mastery related to association with peers and to the use of toys and equipment so as to move out of himself and confront reality more effectively. The success and associated pleasure of mastery over the play environment can further become associated with the resolution of conflicts experienced in play and with the prestige gained through the mastery.

Lieberman (14), in a study which included 93 kindergarten children concluded that children who were rated as more playful were also better at creative tasks. Unfortunately, in this study, as in many others involving creativity measures, we can not be sure whether there is a distinct relationship between playfulness and creativity or whether both are separate manifestations of intelligence.

More specifically, regarding the effectiveness of playgrounds, Rittenhouse and Thompson (17) reported that when the play of children on an adventure playground was compared to that of a conventional supervised playground, the adventure playground produced play in smaller groups and with less peer interaction. There was no significant difference in the leader-participant interaction between the two playgrounds. Rittenhouse and Thompson (18) further found that children participating in an adventure playground made nearly twice as many new friends as those children attending the conventional playground. The strength of the new relationships were also shown to be significant.

The role of the playground leader in arranging and facilitating stimulating play experiences is another aspect of the playground which has not been researched. This and other important questions need to be answered about the effect playgrounds have on children who are handicapped and non-handicapped alike.

Needed Experimental Research

1. Will significant improvement in motor development occur as a result of play experiences on a developmental playground? Will change in motor development be accompanied by change in body image and/or self-concept?

2. Does a developmental playground contribute significantly to the social attitudes and abilities of children who play on it?

3. Can cognitive learning be significantly enhanced through active learning experiences on the developmental playground?

4. Will perceptual motor development be significantly improved through play experiences on a developmental playground? Is there a relationship between the age of the children, type and severity of handicapping condition, and improvement in perceptual motor performance?

5. Is there a relationship between the age of the children, the type and severity of handicapping conditions, and improvement in each of the above variables as a result of the developmental playground experience?

6. Will simultaneous utilization of the developmental playground by handicapped and non-handicapped children produce different results regarding change in each of the above variables as opposed to isolated use by handicapped children alone?

7. What is the importance of the play leader in regard to the effects of the playground on the young child?

Priority Needs

Research and Demonstration

High Level

Conduct descriptive and/or experimental research studies, projects, and programs to answer the following questions:

- To what extent is current traditional equipment on school and community playgrounds being utilized by children? Is there any relationship between the type and severity of the handicapping condition and the use of the equipment? Are the developmental needs of handicapped children being met by traditional playground equipment? What are potential negative psychological effects on children relative to spontaneity, creativity, and discovery on play equipment which severely limit the number of ways in which a child can safely respond? What are relative comparisons of commercial and homemade playground equipment/devices in terms of effectiveness, safety, cost, utilization, appeal, and related factors?

- How can existing playground apparatus be modified for accessibility and safe use by handicapped children? What is the frequency, type and severity of injuries sustained by children with handicapping conditions in attempting to play on traditional playground apparatus? What are differences/similarities in playground equipment/devices appropriate and applicable for nonimpaired/impaired children of various ages/developmental levels?

- What are the abstract preferences of children in regard to color, texture, size, and shape? Do their selections differ when color, texture, size, and shape are incorporated in the design and construction of play apparatus? Do either of the above preferences differ between handicapped and non-handicapped children?

- How does the size, shape, and positioning of play apparatus affect the patterns of movement of children? How does the novelty and complexity of play setting affect movement behavior of children?

- Is there a difference between the response of handicapped and non-handicapped children to play equipment specially designed to stimulate development? Do children of different ages respond to the equipment the same way over an extended period of time?

- Would the experience of handicapped and non-handicapped children in using the same developmental playground produce a modeling effect with regard to motor performance and social interaction? Are there differences in perspectives of children and adults regarding purposes, uses, benefits of various pieces of play apparatus.

- How can members of the community and/or parents effectively be involved in the planning, construction, and supervision of developmental playgrounds? To what extent will community involvement or special design considerations reduce vandalism to unprotected playgrounds? To what extent does inflexible, non-creative, sterotype playground apparatus contribute to vandalism on unprotected playgrounds?

- What are physical characteristics and personality traits making it more/less likely that certain children will be attracted to, successful/unsuccessful in using specific types and pieces of play equipment?

- Will significant improvement in motor development occur as a result of play experiences on a developmental playground? Will change in motor development be accompanied by change in body image and/or self-concept?

- Does a developmental playground contribute significantly to the social attitudes and abilities of children who play on it? To what extent does success on the playground contribute to impaired and disabled children being more readily accepted by their peers and classmates?

- Can cognitive learning be significantly enhanced through active learning experiences on the developmental playground?

- Will perceptual motor development be significantly improved through play experiences on a developmental playground? Is there a relationship between the age of the children, type and severity of handicapping condition, and improvement in perceptual motor performance?

- Is there a relationship between the age of the children, the type and severity of handicapping conditions, and improvement in each of the above variables as a result of the developmental playground experience?

- Will simultaneous utilization of the developmental playground by handicapped and non-handicapped children produce different results regarding change in each of the above variables as opposed to isolated use by handicapped children alone?

- What is the importance of the play leader in regard to the effects of the playground on the young child? What competencies are basic to successful leader in utilizing play apparatus effectively in developmental process of children with different handicapping conditions of various ages and functional levels?

Personnel Preparation

High Level

- Provide inservice and preservice training materials and opportunities through paraprofessional, undergraduate, and graduate professional preparation programs, workshops, seminars, symposia, orientation sessions, institutes, and conferences to disseminate and apply research findings relative to use of play apparatus by children with various handicapping conditions.

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RELATED PROJECTS FUNDED BY THE BUREAU OF EDUCATION FOR THE HANDICAPPED

Physical Education and Recreation for the Handicapped is a relatively new program in the Bureau of Education for the Handicapped. Projects in this area were initially funded during fiscal year 1969 with $300,000 expended in research/demonstration projects and $300,000 in training activities. While appropriations for training(personnel preparation)projects have increased significantly since 1969, funds for research/demonstration (innovation and development) have remained relatively constant. The following research/demonstration projects were supported by BEH during the period of 1969 to 1973.

Division of Innovation and Development

Berryman, Doris - Project No. 23-3496 - 6/1/73 to 5/30/76

This is a three year study to assess utilization of play and recreational activities in relation to achievement of specific academic, learning and/or treatment goals. A conceptual model was developed to analyze play and recreational activities to determine sensory motor, cognitive, affective, and social dimensions.

Carr, Dorothy - Project No. 14-2709 - 4/28/69 to 7/31/73

Title: Sequenced Instructions Programs in Physical Education for the Handicapped and Development of a Screening and Assessment Device and Audio and Visual Media to Accompany "Sequenced and Field Tested Physical Education Instructional Program for the Handicapped"

In Phase I instructional activities for a comprehensive physical education program for handicapped pupils from preschool through high school were developed and field tested. To support these sequenced activities audio and visual media were developed in motor and movement skills, playground and recreation skills, rhythms, swimming skills, and physical fitness.

Cratty, Bryant - Project No. 14-2710 - 6/11/69 to 10/10/71

Title: The Effect of a Program of Gross Body Movement Upon Selected Abilities of Retarded Children

Purpose of the study was to assess effectiveness of learning games on selected adademic subjects. In a controlled experiment it was found that the slow learner experimental group performed better in tests of letter recognition and measures of persistence. No significant changes were noted in respect to IQ. It was concluded that use of active learning games, applied correctly, can have a "beneficial effect" upon selected academic operations.

Evans, James - Project No. 23-3595 - 6/30/72 to 6/29/73

Title: A Diagnostic Physical Education Center for the Trainable Handicapped Child

In this demonstration a screening and evaluation procedure related to fundamental motor activities was developed for handicapped trainees. Methods for training para-professionals through the use of visual aids and live instruction and in relation to needed physical skills were also developed.

- Mann, Lester - Project No. 70-3557 - 4/15/70 to 4/14/72

Title: A Comparison of Three Methods of Physical Education Programming For Emotionally Disturbed Children

Four groups of emotionally disturbed children were randomly assigned to a control group, physical fitness, general coordination, and specific skill treatment groups, All received pre, post, and retention tests. The attempt was made to eliminate undesirable physical behavior and to redirect it into purposeful physical activities while improving emotional adjustment. Results indicated that whereas the quality of motor behavior was raised, inconclusive results were obtained for emotional adjustment and learning aptitude.

- Marshall, William - Project No. 27-2707, 6/16/69 to 8/31/72

Title: Mobile Recreation and Physical Education Unit

A mobile recreation and physical education unit was developed and utilized in this project to disseminate information on physical education and recreation for the mentally retarded throughout the state of Kentucky. Services provided by the unit had a marked positive effect on the physical education and recreation program of 15 participating day care centers.

- Rarick, Larry - Project No. 14-2714 - 2/1/70 to 3/31/72

Title: Basic Components in the Motor Performance and the Motor Learning of the Educable Retarded: Implications for Curricula Development

Purpose of this research was to determine the factor structure of motor abilities of the educable mentally retarded. Curricular guidelines for physical education for EMRs were developed. EMRs were found to be less able in muscular strength, gross and fine motor control and balance than normals of the same age and sex. EMR's greater body fat indicated insufficient physical activity. Although the motor development of the EMRs was slower the factor structure of motor performance was similar to normals.

Rarick, Larry - Project No. 23-3544 - 6/1/73 to 5/31/75

Title: The Factor Structure of Motor Abilities of Trainable Mentally Retarded Children (TMRs): Implications for Curricular Development

Purpose of this research was to determine the factor structure of motor abilities of TMRs and to use the results in developing tests of motor assessment in TMRs. Guidelines for curricular development will be prepared.

- Stein, Julian U. - Project No. 23-3563 - 6/30/72 to 6/29/75

Title: Information and Research Utilization Center in Physical Education and Recreation for the Handicapped.

The effort is being made through this study to assess research needs in the area of physical education and recreation for the handicapped. Purpose is to collect, categorize, evaluate, interpret and disseminate information about materials, program practices, and research in physical education and recreation. Different approaches to dissemination will be evaluated.

Trends indicative of specific needs have already emerged (11/20/73). While increasing attention is paid to transfer of learning, the application of existing research and additional analyses are still needed to present definite statements related to motor and cognitive development. Duplication of effort and activity proceeds apace. Improved communication is therefore a pressing need. Training of personnel to oversee programs is not proceeding in accordance with the need.

- Wessel, Janet - Project No. 32-2718 - 6/1/71 to 8/31/74

Title: Programmatic Research Project in Physical Education for the Mentally Retarded Child in the Elementary School.

This project represents a major curriculum research and demonstration effort in physical education for the mentally retarded. It is designed to develop, implement, evaluate and disseminate individualized physical education curriculum materials with teacher training materials. Modules in psychomotor development, leisure time activity, cognitive and affective domains including associative learning have been completed. This review while it serves to illustrate the value of individual effort, also confirms the suspicion that lack of a planned and coordinated effort results in duplication and waste, ineffectual and diametrically opposed project goals and no attempt to national priorities.

- Peter Verhoven, RFP 74-33 - 9/11/74 to 6/30/75

Title: Conference on Leisure Time Activity for the Handicapped

This project represents an effort to develop research and demonstration priorities to guide the Bureau of Education fot the Handicapped in establishing funding strategies. Conference proceedings, including an annotated bibliography will be widely publicized and made available to interested parties serving the handicapped.

- Bowers, Louis - Project No. HOO16SN - 9/15/74 to 9/14/75

Title: An Investigation of the Effect of a Play - Learning Center on the Body Image, Self Concept, Perceptual Motor Performance, and Symbolic Concept Learning of Handicapped Children

Purpose of this study is to design, build, and evaluate effectiveness of a play - learning center on the physical and cognitive development of preschool children. Three play learning demonstration centers for emotionally disturbed, cerebral palsied, and mentally retarded will be designed, constructed, and evaluated. Visual media method will be used to translate research results into program action.

PERSONNEL PREPARATION AND RESEARCH DEMONSTRATION GRANTS IN PHYSICAL EDUCATION AND RECREATION

Division of Personnel Preparation and Innovation & Development
U.S. Office of Education
Academic Year 75-76

PERSONNEL PREPARATION PROGRAMS AND PROJECT DIRECTORS

Code following each entry indicates major emphasis of that program -- PE-Physical Education; R-Recreation

CALIFORNIA

California State University, Northridge, California 91324 (Jean Tague, Professor, Department of Recreation) -R

California State University, Long Beach 90801 (Daniel D. Arnheim, Professor of Physical Education)-PE

California State University, San Jose 95114 (Paul Brown, Chairman, Department of Recreation and Leisure Studies; Lou Charlotte, Associate Professor)-R

University of California, Berkeley 94720 (G. Lawrence Rarick, Professor, Department of Physical Education)-PE

University of California, Los Angeles 90024 (Jack F. Keogh, Associate Professor, Department of Physical Education)-PE

COLORADO

University of Northern Colorado, Greeley 80631 (Max Shirley, Head, Department of Recreation; John Cogley, Coordinator)-R

CONNECTICUT

University of Connecticut, Storrs 06268 (Hollis F. Fait, Professor, Department of Physical Education)-PE/R

DISTRICT OF COLUMBIA

George Washington University, Washington, D.C. 20052 (James L. Breen, Professor and Chairman, Department of Health, Physical Education, Recreation; Donald Hawkins, Research Professor)-PE/R

FLORIDA

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University of South Florida, Tampa 33620 (Louis Bowers, Chairman, Department of Physical Education; Steve Klesius, Associate Professor)-PE

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Indiana University, Bloomington 47401 (Evelyn A. Davis, Physical Education for Women)-PE

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University of Kentucky, Lexington 40506 (Dennis Vinton, Head, Curriculum in Recreation and Parks)-R

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University of Maryland, College Park 20742 (Jerry Fain, Instructor, Physical Eduation, Recreation and Health)-R

MICHIGAN

Michigan State University, East Lansing 48823 (James L. Bristor, Health, Physical Education, and Recreation; Carol Petersen, Coordinator)-R

MISSISSIPPI

University of Southern Mississippi, Hattiesburg 39401 (Walter Cooper, Dean, School of Health, Physical Education and Recreation)-PE/R (Program Assistantance Grant)

MISSOURI

University of Missouri, Columbia 65201 (Leon Johnson, Assistant Professor, Health and Physical Education)-PE/R

NEW YORK

New York University, New York City 10003 (Raymond A. Weiss, Coordinator, Division of Physical Education, Health and Recreation)-PE

New York University, (Washington Square) New York City 10003 (Claudette Lefebvre, Area Director, Recreation and Camping Education; Doris Berryman, Professor, Therapeutic Recreation Research)-R

State University College at Brockport, Brockport 12203 (Joseph P. Winnick, Associate Professor, Physical Education Department; Marty Puthoff and Ron French)-PE

NORTH CAROLINA

North Carolina Central University, Durham 27707 (Leroy T. Walker, Professor and Chairman, Department of Physical Education and Recreation; George Kee, Project Coordinator)-PE

University of North Carolina, Chapel Hill 27514 (Lee Meyer, Project Coordinator; Douglas Sessoms, Director)-R

Appalachian State University, Boone 28607 (Ernest K. Lange, Coordinator, Division of Human Resources; Ben Brooks, Director)-PE

OHIO

Ohio State University, Columbus 43210 (Walter F. Ersing, Assistant Professor, School of Health, Physical Education, and Recreation)-PE

OREGON

University of Oregon, Eugene 97403 (Larry L. Neal, Director, Center of Leisure Studies; Fred Martin, Assistant Professor)-R

PENNSYLVANIA

Pennsylvania State University, University Park 16802 (Dan Kennedy, Coordinator, Therapeutic Recreation Curriculum, Department of Recreation and Parks)-R

Slippery Rock State College, Slippery Rock 16057 (David Auxter, Professor, Department of Physical Education and Recreation)-PE

TENNESSEE

George Peabody College for Teachers, Nashville 37203 (J. Merritt Graves, Department of Health and Physical Education)-PE

TEXAS

Texas Woman's University, Denton 76204 (Claudine Sherrill, Associate Professor, Department of Health, Physical Education, and Recreation)-PE

University of Texas at Austin, Austin 78712 (Alan Dobbins, Director, Department of Physical and Health Education)-PE

UTAH

University of Utah, Salt Lake City 84112 (O.N. Hunter, Dean, School of Physica Education and Recreation)-PE

VIRGINIA

University of Virginia, Charlottesville 22204 (Patrick Bird, Project Director, Master's Training Program in Adapted Physical Education) (Program Assistance Grant)

WISCONSIN

Wisconsin State University at La Crosse, La Crosse 54601 (Lane A. Goodwin, Associate Professor, Department of Physical Education)-PE

SPECIAL PROJECTS

ILLINOIS

University of Illinois, Champaign 61820 (Jerry Kelley, Director; Gary Robb, Project Coordinator, Office of Recreation and Park Resources) Two-year Curriculum in Therapeutic Recreation

IOWA

University of Iowa, Iowa City 52240 (John A. Nesbitt, Chairman, Recreation Education Program; Gordon Howard, Coordinator) National Institute on Community Based Therapeutic Recreation Services

MISSISSIPPI-LOUISIANA

Therapeutic Recreation Consortium, Jackson State, Southern University and A & M and Grambling College -- (Melvin Evans, Chairman, Dept. of Health, Physical Education, and Recreation, Jackson State College, Jackson, Miss.; Clifford Seymour, Southern University and A & M College, Baton Rouge, La.; Pearl Vaughn, Grambling College, Grambling, La.)

PENNSYLVANIA

Temple University, Philadelphia 19122 (Jerry Jordan, Director) - Process Approach to Competency Based Graduate Curriculum in Therapeutic Recreation

VIRGINIA

National Recreation and Parks Association, 1601 N. Kent Street, Arlington 22209 (Peter Verhoven, Director; Judy Goldstein, Coordinator) Post Masters Consultant Training.

WASHINGTON

YMCA of Southwest Washington, Longview 98632 (Grace Reynolds, Project Director) - Project Aquatics

INNOVATION AND DEVELOPMENT PROJECTS

CALIFORNIA

University of California, Department of Physical Education, Berkeley, California 94720 (G. Lawrence Rarick, Professor)

DISTRICT OF COLUMBIA

Physical Education and Recreation for the Handicapped - Information and Research Utilization Center, American Alliance for Health, Physical Education, and Recreation, 1201 Sixteenth Street, N.W., Washington, D.C. 20036 (Julian U. Stein, Director)

Leisure Information Service, 729 Delaware Avenue S.W., Washington, D.C. 20024 (Don Hawkins, Director; William C. Chasey, Principal Investigator)

FLORIDA

University of South Florida, Tampa, Florida 33620 (Louis Bowers, Professor of Physical Education)

KENTUCKY

University of Kentucky, Lexington, Kentucky 40506 (Denis Vinton, Head, Recreation Curriculum)

MARYLAND

Maryland National Capitol Parks and Planning Commission, Special Services Division, Department of Parks and Recreation, 6600 Kennilworth Avenue, Riverdale 20840 (Karen Littman, Director - Associative Learning Through Developmental Play: Providing Life Experiences Through Recreation and Physical Education for Handicapped Pre-School Children)

MICHIGAN

Michigan State University, East Lansing, Michigan 48823 (Janet Wessell, Professor, Physical Education)

NEW YORK

New York University, (Washington Square), New York City 10003 (Doris Berryman, Professor, Recreation)

VIRGINIA

National Recreation and Parks Association, 1601 North Kent Street, Arlington 22209 (Peter Verhoven, Research Manager; Dave Compton, Coordinator -- Career Education Program)

NOTE: Contact listed persons at the college/university or agency in which you are interested for additional information about the program and procedures to follow in applying for admission

BEH STAFF - Bill Hillman, Division of Personnel Preparation, and Mel Appell, Division of Innovation and Development, Physical Education and Recreation, Bureau of Education for the Handicapped, 7th and D Streets, S.W., Washington, D.C. 20202 (tel: 202 245-949[illegible]

ANALYSIS OF FUNDED PROJECTS IN PHYSICAL EDUCATION AND/OR RECREATION FOR THE HANDICAPPED

IRUC staff reviewed 1974 state reports to identify projects in physical education, recreation, and related areas for persons with handicapped conditions. Funding of these activities has been from a variety of federal and/or state legislative authorizations. Information gleaned from these state plans are tabulated and summarized as follows:

Chart 1: States with Projects in Physical Education, Recreation, and/or Related Areas for Participants With Handicapping Conditions

Chart 2: Project Activities/Area of Emphasis

Chart 3: Project Participants

Chart 4: Project Personnel

Chart 5: Project Funding Sources

CHART 1: STATES WITH PROJECTS IN PHYSICAL EDUCATION, RECREATION, AND/OR RELATED AREAS FOR PARTICIPANTS WITH HANDICAPPED CONDITIONS

	Total Number of States/ Territories	States with projects in PE and/ or Rec	States without projects in PE and/ or Rec	States with no report	Unknown	States/ Territories Served
TOTAL	51	24* **	21	6	-	National
AAHPER DISTRICTS						
Central	9	4	4	1	-	*CO, IA, KS, MN, MI, NB, ND, SD, WY*
Eastern	13	5	6	1	1	*CN, DE, DC, ME, MD, NH, NJ, NY, PA, PR, RI, VT*
Midwest	6	4	2	-	-	*IL, IN, MI, OH, WV, WI*
Northwest	5	1	2	2	-	*AK, ID, MT, OR, WA*
Southern	13	7	5	1	-	*AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA*
Southwest	7	3	2	1	1	*AZ, CA, Guam, HI, NM, UT*
ALRC/RRC REGIONS						
1	10	1	4	2	3	*AK, HI, Samoa, Guam, Trust Territory, WA, OR, ID, MT, WY*
2	1	1	-	-	-	*CA*
3	6	3	1	1	1	*NV, UT, CO, AZ, NM, BIA SCHOOLS*

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* Entries indicate number of states.
** One project in Delaware received dual funding.

Chart 1 (continued)

	Total Number of States/ Territories	States with projects in PE and/ or Rec	States without projects in PE and/ or Rec	States with no reports	Unknown	States/ Territories Served
4	8	4	4	-	-	*ND, SD, NB, KS, OK, IA, MI, AR*
5	1	-	1	-	-	*TX*
6	4	3	-	1	-	*MN, WI, MI, IN*
7	1	-	1	-	-	*IL*
8	1	-	1	-	-	*OH*
9	7	2	5	-	-	*ME, VT, NH, MA, RI, CN, NJ*
10	1	1	-	-	-	*NY*
11	1	-	1	-	-	*PA*
12	10	6	-	2	2	*DL, DC, MD, VA, WV, KY, TN, NC, PR, Virgin Islands*
13	6	3	3	-	-	*LA, MS, AL, GA, SC, FL*

CHART 2: PROJECT ACTIVITIES/AREAS OF EMPHASIS

	Projects Exclusively In PE/Rec	Projects with Components of PE/Rec	Projects Related to PE/REC	TOTAL
Total	23*	49	15	87
Special Olympics	1	-	-	1
Perceptual-Motor	10	18	-	28
Camping	1	1	-	2
Physical Skills	1	-	-	1
Movement Education	1	-	-	1
Recreation	3	10	-	13
+Movement Education	1	-	-	1
+Motor Skills	1	-	-	1
+Leisure Activities	1	-	-	1
+Leisure Skills/Education	-	3	-	3
+Cultural Activities	-	2	-	2
+Parent Training	-	2	-	2
Physical Education	3	9	-	12
+Recreation	-	1	-	1
+Perceptual Motor	-	1	-	1
Physical Training	-	1	-	1
Mobility	-	-	4	4
Physical Therapy	-	-	2	2
Summer Programs	-	-	1	1
Outdoor Education	-	-	3	3
Supplementary Activities	-	-	1	1
Music	-	-	2	2
Residential Programs (Camping)	-	-	1	1
Creative Arts	-	-	1	1
Unknown	-	1	-	1

*Entries indicate number of projects

CHART 3: PROJECT PARTICIPANTS

	Participants in Project Exclusively in PE and/or Rec	Participants in Projects with Components in PE and/or Rec	TOTAL	Participants in Projects in Areas Related to PE and/or Rec	GRAND TOTAL
TOTAL	6,647*	20,814	27,461	3,015	30,476
Trainable MR	4,302	3,218	7,520	891	8,411
Educable MR	160	802	962	150	1,112
+Hearing Impaired	765	-	765	-	765
Severely/Profoundly MR	65	111	176	12	188
+Moderately/ Trainable MR	210	-	210	-	210
Profoundly MR and Orthopedically Handicapped	30	-	30	-	30
Severely MR	120	-	120	-	120
Visually Handicapped	20	349	369	-	369
Deaf-Blind	6	5	11	25	36
Deaf	128	65	193	188	381
Emotionally Disturbed	151	1,531	1,682	470	2,152
Pre-School Handicapped	450	-	450	-	450
All Handicapping Conds.	210	55	265	-	265
Mentally Retarded	-	-	5,103		5,103
Multiple Handicapped	-	3,904	3,904	-	3,904
Learning Disabled	-	297	297	40	337
Blind	-	20	20	22	42
Physically Handicapped	-	4,228	4,228	-	4,228
MR/VH/PH	-	496	496	-	496
MR/VH/Deaf-Blind	-	485	485	-	485
Hearing Handicapped	-	-	-	46	46
Speech Impaired	-	-	-	30	30
Unknown	-	145	145	-	145

*Entries indicate number of participants

CHART 4: PROJECT PERSONNEL

	Personnel in Projects Exclusively in PE and/or Rec	Personnel in Projects with Components in PE and/or Rec	Personnel in Projects in Areas Related to PE and/or Rec	TOTAL
Personnel Trained	383 *	513	96	992
Personnel Employed	139	1,433	157	1,729

*Entries indicate number of personnel

CHART 5: PROJECT FUNDING SOURCES

	Projects Exclusively in PE and/or Rec		Projects with Components in PE and/or Rec		Projects in Areas Related to PE and/or Rec		TOTAL
	Number	Funds	Number	Funds	Number	Funds	
ESEA							
Title I	1*	$ 32,346	5	$327,812	-	-	$360,15
Title III	5**	400,779	4	420,321	2	83,500	904,60
Education of Handicapped Act							
Part B	17	760,959	40	8,906,626	11	844,804	10,512,38
Part C	1	2,698	-	-	2	13,500	16,19
TOTALS	24**	1,1[illegible]6,782	49	9,654,759	15	941,804	11,793,34

*Entries indicate number of projects
**One Project in Delaware Received Dual Funding

Several trends become evident when these data are reviewed and analyzed:

- Slightly over 50 percent of reporting states (53.3 percent; 24 of 45) had projects funded exclusively, with components, or in areas related to physical education and/or recreation for persons with various handicapping conditions.

- Much variation in number of projects dealing with physical education and/or recreation for persons with handicapping conditions was noted throughout the six AAHPER geographic districts and areas served by the ALRC/RRC regions.

- The total number (87) of project exclusively (23), with components (49), or in areas related (15) to physical education and/or recreation for persons with various handicapping conditions was extremely small when viewed in terms of the total number of projects funded under federal and state legislative authorizations.

- Over twice as many projects were reported with components (49) in physical education and/or recreation than those dealing exclusively (23) with these areas.

- Projects dealing with perceptual-motor development (29) or some aspect of recreation/leisure (23) were reported most often and found in significantly more instances than other areas or activities.

- Projects involving participants with some level of mental retardation (11,817), various combinations of handicapping conditions (2,262), multiple conditions (3,904), and physical impairments/disabilities (4,258) were the most prevalent ones reported. It appeared that greater emphasis and attention were given to individuals/groups at lower functional levels and with more severe/profound and/or multiple conditions.

- While apparently large sums of money--$1,196,782 in projects exclusively in physical education and/or recreation for participants with handicapping conditions, $9,654,759 in projects with components in physical education and/or recreation for participants with handicapping conditions, and $941,804 in projects in areas related to physical education and/or recreation for participants with handicapping conditions--are being directed into these areas, totals represent a small percentage and proportion when all available funds ($153,464,720) from these federal and/or state appropriations are considered. Similar situations and patterns have been noted in other legislative authorizations and appropriations not a part of this analysis. This trend is difficult to understand, justify, and rationalize because of increasing emphasis given to importance of physical education, recreation, and related areas for persons with various handicapping conditions by personnel from different disciplines and in various environmental situations.

- Little conclusive evidence or definitive statements can be made from data regarding personnel trained and/or employed as a result of these projects.

Implications, ramifications, and needs drawn from this analysis include:

- Because of increasing autonomy and emphasis given state and local decision making processes in developing special education plans and programs, more availability and use of revenue sharing funds, decentralization of federal programs and mandates that guarantee every child regardless of type or severity of handicapping condition, it is imperative that provisions for physical education and recreation be included as a part of legislation dealing with general and specific aspects of special education and incorporated into guidelines and administrative directives used in developing these plans and in expanding these funds. Past experience shows that unless areas are stipulated in these ways, they receive little, if any, systematic consideration. These inclusions are needed in operational procedures implemented through BEH's Divisions of Assistance to States and Media Services to provide greater impetus to and example for this process.

- Greater consistency through various geographic regions in awareness and involvement in physical education, recreation and/or related areas for persons with handicapping conditions can be obtained and stimulated through concerted, organized, and systematic leadership from professional associations such as American Alliance for Health, Physical Education, and Recreation, National Recreation and Park Association, National Therapeutic Recreation Society, American Corrective Therapy Association, and through coordinated programs and activities of the National Center for Educational Media and Materials for the Handicapped, Area Learning Resource Centers, and Regional Resource Centers. This action is recommended and needed to promote greater interdisciplinary cooperation and multiagency teamwork so as to reduce as much unnecessary and unwarranted duplication of effort among interested and involved groups.

- Continue to strive for more consistency in terminology. Evidence still reveals that the same terms/words are often used to indicate different concepts while different terms/words are frequently used to designate the same concepts. This not only adds to inter and intra-disciplinary confusion but makes it extremely difficult to analyze programs, evaluate activities, and determine status.

- Place greater emphasis on activities and related methods found most frequently in reported projects in pre and inservice training and preparation programs. More consideration and recognition needs to be given meeting local and state needs and priorities from national, regional, and district levels.

- Devise ways to increase federal, state, and local legislative authorizations and related appropriations along with greater administrative support at these levels for physical education, recreation, and related areas for persons with handicapping conditions.

RELATED CONFERENCES/PROJECTS
SPONSORED BY OTHER GROUPS AND ORGANIZATIONS

RECREATION AND HANDICAPPED PEOPLE

The President's Committee on Employment of the Handicapped and the National Recreation and Park Association cosponsored a National Forum on Meeting the Recreation and Park Needs of Handicapped People on August 15-16, 1974. Impaired and disabled persons and representatives of various agencies delivering recreational services interacted with each other through forum sessions, discussed in depth pertinent issues, and made recommendations for action. Issues debated included:

- Segregation vs Integration
- The Role of the Voluntary Health Agency in Recreation Programing for the Handicapped and its Affect on the Responsibility of the Community Recreator
- How Important is Need to Have Specially Trained Personnel (therapeutic recreation professionals) to Conduct Programs That Serve Handicapped People?
- Architectural Barriers
- Legislation Affecting Participation of the Handicapped in Recreation Programs and Facilities
- Financing Recreation Programs for the Handicapped
- Effects of Disability on Non-Handicapped Participants... A Problem of Attitudes
- Insurance Costs - Fact or Myth?
- Recreation as a Rehabilitation Tool
- The Value of Consumer Input into Recreation Planning and Design
- Employment of the Handicapped in Recreation and Park Occupations
- Transportation

Experiences of this Forum were such that many individuals attending recommended that similar forums be conducted at both state and local levels. This recommendation was based on their belief that while issues involved would be strikingly similar, solutions would vary dramatically. The forum concept provides a unique opportunity for local or state agencies, organizations, and consumers to come together and express their views, hear the views of other interests, and grow in both understanding and cooperation. Individuals or groups that would like more information on how to organize, arrange, and conduct a forum should write the Committee on Recreation and Leisure, President's Committee on Employment of the Handicapped, Washington, D.C. 20210. Detailed proceedings of the National Forum can be found in Recreation and Handicapped People: A National Forum on Meeting the Recreation and Park Needs of Handicapped People which is also available from the President's Committee on Employment of the Handicapped.

AN OVERVIEW OF THE STATUS OF CAMPING FOR THE HANDICAPPED IN THE UNITED STATES

The National Therapeutic Recreation Society (NTRS) Committee on Camping for the Handicapped was established in the fall of 1973 to study and explore camping for the handicapped and to identify specific problems and needs to which NTRS, therapeutic recreation (specialists), and professionals in related professions and disciplines might address themselves. The following report was presented at the Annual NTRS Congress in Denver, Colorado during October 1974. Included in this report are:

- A Statement of Concern, identifying major problem areas and general recommendations for future action by NTRS and other groups and organizations concerned with camping for the handicapped.
- Summary of a comprehensive review of the literature and research dealing with (1) program, (2) personnel, (3) training, (4) legislation, and (5) research in camping for the handicapped.
- An extensive (602 entries) Bibliography on camping for the handicapped.

AN OVERVIEW OF THE STATUS OF CAMPING FOR THE HANDICAPPED IN THE UNITED STATES

Report of the Committee
on Camping for the Handicapped
National Therapeutic Recreation Society
October, 1974

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* Addresses current as of October 1974.

Introduction

The National Therapeutic Recreation Society (NTRS) Committee on Camping for the Handicapped was established in the fall of 1973 to study and explore the area of camping for the handicapped and to identify specific problems and needs to which NTRS, therapeutic recreation professionals, and other professionals in related professions and disciplines might address themselves. An initial goal of the Committee was the formulation of a statement which might serve as the basis for an official NTRS position on camping for the handicapped.

An initial task of the committee involved a comprehensive review of the literature and research related to camping for the handicapped. The purpose of this task was to provide an overview of the state-of-the-art of camping for handicapped individuals in the United States which would serve as a basis for identifying needs and establishing priorities.

A summary of the results of the literature review is presented in this report and is divided into five topical headings: (1) program, (2) personnel, (3) training, (4) legislation, and (5) research. The summary is intended only to provide a general overview of the state-of-the-art of camping for the handicapped and should not be interpreted as a definitive statement on the subject. Those who are interested in exploring specific topics in more depth are referred to the bibliography which has been appended to this report.

Upon completion of the literature review, the Committee met in Washington, D. C., during the summer of 1974 to consider the formulation of a position statement. Two primary concerns were expressed by the Committee at that meeting: 1) because the provision of camping services to handicapped populations is highly diffused among numerous agencies, professional organizations and associations, the Committee lacked the "representativeness" to set forth a comprehensive position statement that would adequately accommodate the variety of philosophies and points of view on the subject and; (2) in light of the yawning gaps of data and general knowledge revealed by the literature search, a comprehensive position statement on camping for the handicapped would be premature at this time.

Consequently, the Committee decided to issue a "statement of concern" which includes the identification of major problem areas and general recommendations for needed future action on the part of NTRS and other groups and organizations concerned with camping for the handicapped. That statement of concern comprises the first section of this report.

Statement of Concern

"Camping for the handicapped" is a multifarious phrase. While there is no universally accepted definitions for the phrase, it generally denotes day camping, overnight camping, short-term and long-term residential camping, primitive camping, survival camping, school camping, and family camping. It also denotes year-round camping, as well as the traditional summer camping. In terms of camper populations, camping for the handicapped denotes both segregated and integrated camping with integration not only of normal and handicapped campers, but also on non-peer campers such as senior citizens and handicapped children. Additionally, camping for the handicapped denotes recreational camping, therapeutic camping, and the many varied combinations of the two.

The diverse nature of camping for the handicapped is reflected in the myriad of public, private, and voluntary organizations which are presently involved in the provision of services in this field. Innumerable organization sponsor camps; set standards pertaining to camp programs, personnel, and facilities; produce publications; and fund research. However, with few exceptions, the majority of these organizations are involved in only one small area of the total camping for the handicapped movement. Cooperation between interested organizations does exist, but on a small scale and usually without continued effort. To date, no large scale, sustained, unified approach has been taken in the provision of camping services for the handicapped.

The lack of a unified approach has resulted in duplication of services in many areas and a void in services in others. Concurrently, the limited dissemination of information has thwarted all wide-scale efforts to accurately assess the status of camping for the handicapped. The quantity and quality of camping services being provided for individuals with handicapping conditions is for the most part not known. Until adequate assessment can be made, effective expansion and improvement of camping services for the handicapped will be hindered.

The National Recreation and Park Association has, in the past, followed a policy of advocacy for programs of recreation service for special populations. In accordance with this policy, NRPA and NTRS have the responsibility of influencing interested others to pursue a coordinated effort in the assessment and further development of camping services for the handicapped. To that end, the following course of action is recommended.

1. Establishment of formal relationships with the American Camping Association regarding:

    A. Development of comprehensive acceptable standards for ACA accreditation of camps serving the emotionally disturbed, mentally ill, and mentally retarded which are comparable to those for camps serving the physically handicapped.

    B. Development of standards for camp directors and other key camp personnel in camps for the handicapped.

    C. Development of a special interest section within ACA/NTRS on camping for the handicapped for the purpose of supporting legislative activity, presenting conference programs, and disseminating information.

2. Establishment of similar relationships with the National Easter Seal Society, as a primary sponsor of camping for the handicapped programs.

3. Development of an inter-organizational task force on camping with representatives from the National Therapeutic Recreation Society, National Easter Seal Society, American Camping Association, Muscular Dystrophy Association of America, United Cerebral Palsy, American Foundation for the Blind, National Park Foundation, National Association for Retarded Citizens, and others to coordinate the following efforts:

    A. Survey organizations providing camping services to the handicapped to accurately assess the current status of these services.

    B. Study means and develop channels for the collection and dissemination of information concerning current trends, model programs, research, and other pertinent material to interested organizations and individuals.

    C. Study year-round camping programs for the disabled currently in operation and establish guidelines for the development of similar programs, including information on funding, cost analysis, feasibility, and programing potential.

    D. Study, develop, and publish guidelines for camp counselor training courses, including information on every type of camping situation.

    E. Study and/or develop guidelines for university and college camp affiliations. Disseminate information on participating camps and schools.

    F. Develop an explicit position on integrated/segregated programing, based on realities of current availability of resources and opportunity.

    G. Explore funding potential for demonstration projects on camping for the handicapped using the resources of a major university and quality camps serving the handicapped.

H. Encourage and promote legislation which will remove architectural and functional barriers while maintaining the highest level of challenge possible.

I. Promote public and professional awareness of the needs and benefits of camping for the handicapped through the utilization of public and professional journals, periodicals, booklets, pamphlets, monographs, etc.

Overview of Camping for the Handicapped

Program

Camping programs for the handicapped vary in terms of setting, type of activities, and length of sessions just as "normal" camping programs vary. However, unlike the majority of "normal" camping programs, they also vary in terms of therapeutic goals and the use of therapeutic techniques. Some camps include formal therapy sessions in their camping activities. The most commonly found types of formal therapy are counseling for the emotionally disturbed, remedial learning activities for children with learning disabilities, physical therapy and speech therapy for the physically disabled, and self-care classes for diabetics.

Modified camping activities are preferred to formal therapy in some camps to achieve specific therapeutic goals. In these camps, needed physical activity is gained through carefully selected camping activities, academic subjects are taught through the crafts, swimming, and other activities, and changes in behavior are achieved through the integration of behavior modification techniques in the camping program. Strict adherence to one method of therapy is the exception rather than the rule.

The majority of therapeutic camps described in the literature use a combination of formal and activity-based techniques to achieve their set goals. It should be noted that all camps for the handicapped do not have specific therapeutic objectives for their camps. Many offer a purely recreational camping program which is based on the philosophy that camping inherently is therapeutic for all participants.

The major trends in camping programs for the handicapped are the integration of handicapped with non-handicapped campers, year-round camping, residential camping as an alternative to institutionalization, family camping, and survival camping. Integration of handicapped with non-handicapped campers has been described in the literature for every major disability type and both successful and unsuccessful integration has been documented. Although the issue of when and how integration is successfully achieved has not been settled, some answers are being provided in the form of demonstration projects and research studies.

Year-round camping is a relatively new trend gaining impetus across the nation. It is being offered as a solution to the problems created by increasing demands for camping opportunities and the financial wastes entailed in restrictive seasonal usage. Limited descriptions and discussions are available in the literature but the overall impact of year-round camping has not yet been assessed and documented.

Several model projects which use residential camping in place of or as a supplement to institutionalization have been described in the literature. This approach has been used with the mentally ill, emotionally disturbed, socially deviant, and the mentally retarded. Some positive outcomes have been reported, especially with long-term camping for the emotionally disturbed and the socially deviant.

Family camping for families with one or more disabled members is another area on which attention is presently being focused. Not only are state and national parks being made more accessible to the physically handicapped, but also special areas and programs are being developed so that individuals with handicapping conditions can camp overnight or for short periods with their families in these parks.

Survival camping is another type of program which is now being offered to sections of the handicapped population. The majority of the programs described in the literature are for the emotionally disturbed and mentally retarded. However, modified survival camping programs have also been tried with the blind and the diabetic.

Personnel

The required academic background and prior experience of personnel varies considerably from camp to camp, as do the staffing patterns. These variations are for the most part due to differences in camp philosophies and goals. Those camps that plan specific therapeutic goals for each camper generally hire professional "therapists" and educators to serve as counselors. The more common recreationally oriented camp usually is staffed with counselors on a par with "normal" camp counselors and with professionals to direct only certain parts of the camping program.

Staff to camper ratios also vary considerably from camp to camp. Here again, these variations are largely due to differences in the philosophy and the goals of the camps. Both the National Easter Seal Society and the American Camping Association recommend a ratio of one staff member for every four mildly disabled campers, and one staff member for every two severely disabled campers. These ratios include as staff members both counselors and counselor-support personnel. Degree of adherence to these recommendations, however, is not known for the majority of camps serving the disabled.

In a few of the camping programs described in the literature, volunteers are being used to increase the staff to camper ratio. The volunteers range from college and university field work students to just interested persons from the community. Among the more novel groups of volunteers being utilized successfully in camps serving the handicapped are Vista workers, members of the senior citizens groups, older campers with handicapping conditions, and reformatory inmates.

Extensive surveys of personnel practices in camps serving the handicapped are only available for small segments of the country and most of them were conducted in the fifties and early sixties. Up-to-date information on functional job analyses and staffing patterns being used across the nation could not be located in the literature search.

Training

Information on personnel training is scarce. However, it appears that each camp determines the amount and type of training their staff receives. Training materials are available from several organizations including the American Camping Association, Boy Scouts of America, National Easter Seal Society, National Association for Retarded Citizens and the National Recreation and Park Association, but the majority of this information is known by and distributed only to members of the publishing organization. It is not known to what extent this information is used by non-member camps in their training programs.

Some colleges and universities offer professional training courses for counselors and camp administrators which are specifically geared to camping for the handicapped. However, the actual number of institutions offering such courses is not known. The American Camping Association offers a Camp Director Certification Program but it does not include specialized training for camp directors dealing with handicapped campers.

During the spring of 1972, a major national conference on training needs for personnel in camping, outdoor and environmental recreation for the handicapped children was sponsored by the Bureau of Education for the Handicapped and San Jose State University. The conference brought together approximately 50 individuals from across the nation representing the major organizations providing camping programs for the handicapped, camp administrators, therapeutic recreation specialists, educators and others. Using a modified Delphi technique, the conference participants developed a broad ranging position statement on training in camping, outdoor and environmental recreation for the handicapped. This statement, together with additional position statements and conference proceedings, was included in Training Needs and Strategies in Camping for the Handicapped published by the University of Oregon Press in 1972. To date, there is little evidence that recommendations emanating from this conference have been implemented.

Standards

There are no uniform standards used to regulate camps serving the handicapped. For the most part, each parent organization and each independent camp determines its own standards for facilities, personnel, and programs.

The National Easter Seal Society has been instrumental in developing comprehensive standards for camps serving the physically handicapped, but until recently they were not used as accrediting standards by any state or national camping accrediting agency. However, in April, 1974, the National Easter Seal Society gave the copyrights of their standards to the American Camping Association. The American Camping Association, subsequently, incorporated these standards into their own to be used for any camp serving one or more persons with a physically handicapping condition. The National Easter Seal Society has required that all their camps which operate 30 days or more per year be accredited by ACA by 1976.

Approximately 35 states have some type of regulations for youth camps but many of these states regulate only the sanitation aspects of camp operation. Only a few states have regulations pertaining specifically to camps serving the handicapped and these regulations deal only with the provision of adequate medical personnel and the administration of prescribed medication. No states have regulations concerning facilities and site accessability in camps for the physically handicapped. It is of importance to note that many states exclude the governing of any camp run by a parent organization or religious group. Thus, even if the state regulations were made more stringent, many camps serving the handicapped could operate without having to adhere to the state regulations.

Federal Legislation

The first basic federal legislation for the education of the handicapped, Public Law 83-531 (Cooperative Research), was enacted in 1957. This law earmarked funds related to the needs of mentally retarded children. It was not until 1967, however, that a specific federal legislative authority existed to support research, demonstration, and training in physical education and recreation for handicapped children (Title V, Public Law 90-170, Training of Physical Educators and Recreation Personnel for Mentally Retarded and Other Handicapped Children). In 1970, Public Law 91-230 Title VI (Education of the Handicapped Act) was passed with the inclusion of the research and demonstration authority under Part E, Section 642 (Research and Demonstration Projects in Physical Education and Recreation for Handicapped Children).

The conference on training needs and strategies in camping for the handicapped mentioned previously was funded under the Education of the Handicapped Act. Other projects funded under this legislation that have indirectly benefited the field of camping for the handicapped include the establishment of training programs for therapeutic recreation professionals and several research and demonstration projects related to therapeutic recreation services.

Another area of federal legislative activity pertinent to camping for the handicapped is youth camp safety. Senate Bill 3639 sponsored by Senator Mondale and House of Representatives Bill 16420 sponsored by Representative Daniels deal with the development and implementation of programs for youth camp safety. Their purpose is to provide for the establishment of federal standards for the safe operation of youth camps and to provide federal assistance to the states for the implementation of these standards. The standards are to be developed by the Secretary of Health, Education, and Welfare in consultation with state officials and representatives of appropriate public and private organizations. As of the middle of October, 1974, the Senate bill had been reported out of committee. It is expected to be reported to the Senate floor before the end of the current congressional session. The House of Representatives bill has been reported out of the labor subcommittee, but if is not expected to be reported to the full committee until after the November elections.

Research

The research literature concerning camping for the handicapped is not very extensive. The most common topics of concern are the physical, psychological, educational, and social effects of camping, integration of handicapped with non-handicapped children, and surveys of various types (most of the surveys are pre-1970). The majority of these studies were undertaken at universities as master's theses and doctoral dissertations. Perhaps a good deal of research is being sponsored by various agencies but the results of these studies are not being disseminated to the general public.

Results from available studies indicate that certain benefits can be derived from camping but the lack of duplication of these studies in various types of camps and with various types of campers seriously limits their generalizability. Bateman's (1965) study of mentally retarded day campers in four different camps aptly illustrates this point. She found that as a result of day camping, mentally retarded children improved in cognitive, sensory-motor, language, and socialization skills but the type and amount of improvement varied substantially in the four camps. Thus, on the basis of the research reported to date, no overall statements can be made about the benefits of camping for the handicapped; rather, it can only be stated that certain camping programs have been shown to be physically and psychologically beneficial to certain types of handicapped campers. Following is a list of a few of the findings illustrative of research studies in this area:

- Holden (1960) found an improvement in the body image of physically handicapped children as a result of a day camping and a residential camping experience.

- Holzworth, Grot, and Hippensteel (1973) reported that day camping counteracted the development of anxiety, withdrawal, and feelings of inadequacy in psychiatric patients.

- Long term camping was found by Kinsey and Frost (1971) to be effective in aiding satisfactory adjustment in emotionally disturbed boys.

- Kinzie (1958) reported positive changes in peer relationships and self-care skills in physically handicapped children while attending a residential camp but found that there was little carry-over to their home life.

- A six week summer camping experience for 60 emotionally disturbed children between the ages of 7 and 16 resulted in significant improvement in socialization as camp progressed with the greatest gain occurring during the latter part of the camping experience. Significant improvement in self-concept was also reported (Robb, 1971).

- A positive increase in self-concept and adjusted behavior was brought about by a special four week camp for children with behavioral problems studied by Krieger (1973).

- Children with brain dysfunction syndromes experienced a positive change in physical fitness and adaptive behavior as a result of three and six week residential camping (Lefebvre, 1972).

- Ortego and others (1964) found that aggressive behavior declined in adult mental patients as a result of a five day camp but the change was not paralleled in improvement in mental state.

- Rawson (1973) reported that children with behavioral problems in a camp with a highly specialized therapeutic program showed a significant improvement in interpersonal relationship skills, self-control of inappropriate behavior, attention span, self-confidence and positive attitudes toward authority figures, teachers and school.

- An improvement in self-concept of EMR children was reported in two four-week camps. In one camp physical activities were emphasized and in the other academic activities were emphasized. Neither type of camp brought about an improvement in academic achievement (Steel, 1969).

- Stein (1963) found that physically handicapped adult campers had no significant change in self-acceptance after a two week camp or several months later. He also reported a lack of carry-over of interests or activities from camp to home.

Studies pertaining to integrated camping have show that:

- Segregated camping brings about cooperative behavior with little overt behavior. The opposite case was found to be true of integrated camping (Dibner and Dibner, 1973).
- Group composition affects the participation and interaction of children. Homogeneous groups have greater cooperation and interaction than integrated groups (mentally retarded and non-retarded), but in areas of physical and social functioning retardates can function adequately with non-retardates (Hayes, 1969).
- The presence of sighted campers for the first time in a group of blind and partially sighted campers causes an inability to function on a comfortable, dependent level on the part of the blind (Kempter, 1969).
- A two week integrated camping experience with physically disabled and non-disabled 9-13 year old children brought about a favorable change in attitudes about handicaps in both groups (Richardson, 1971).
- Small group interaction between retarded and non-retarded children in a day camp facilitated friendships among the two groups (Shellhaas, 1969).
- The majority of camp directors in organized and independent camps prefer to accept children with few behavioral problems and, if they must accept campers with behavioral problems, they prefer children with withdrawing rather than aggressive type behavior (Grossman, 1971).

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